Block Inversion in the Irish Town

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Thesis submitted for the degree of PhD
I, Derry O'Connell confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.
Block Inversion in the Irish Town

Emerging patterns of change in the layout framework of plot and block, as observed in the urban tissue of small towns, with particular attention to the changing relationship between front and back in plot organisation.

Abstract

This work examines an emerging process of change in the relationship between street and street-block (hereafter ‘block’) as small Irish towns adjust to new user patterns. Recent surface car parks in the core of traditional blocks have induced change in the surrounding urban fabric, with evidence of significant urban metamorphosis.

The work sets out first to examine the background history of block organisation up to the mid-twentieth century, when the typical urban plot was occupied by a house over shop. Here a previously-unsearched field is explored, finding evidence of advanced block design in many towns.

The work then focuses on recent metamorphosis, where upper floor residence moves to the suburb leaving its redundant back garden to become a customer car park for the ground floor shop. In time the car park joins with others to form an extensive surface car park occupying the centre of the block.

As this becomes the new location of user-entry to the town, shops on the perimeter of the block begin to turn their frontage to the car park, rejecting the street in the process. The central block-core space thus becomes a place of greater importance than the surrounding streets, leading to what might be described as block inversion.

The work traces this metamorphosis finding that many established principles in the organisational structure of the town are challenged, including the fundamental difference between front and back in the readability of the town by its users.

A sample of sixty-six towns forms the field of study, with a focus on six case-study blocks. The research methodology is organised around sequential triangulation, using map regression, planning-file scrutiny and interviews to trace and analyse the pattern of change as a chronological progression. In it, physical limitations are identified which have significant implications for the management of towns.
Impact Statement

The findings from this research will have an impact on both academic thought and the practice of urban planning. Planners aware of the work (11.02.00) have already signalled the expectation that the resultant observations would have a significant impact on planning policy for smaller towns. This work introduces new ways of seeing the street-block of the town, having identified a particular process of block inversion in smaller settlements which had been suspected but not previously measured against long term consequence.

The findings have established an understanding of the forces which trigger recognisable stages in the process of inversion, in time to induce strategic reaction by planning practice before irreversible thresholds are reached. An awareness if this progression allows planners to respond at two scales of activity. The town form can be managed in reaction to what is now known to be happening, and the activities of individual plots can be co-ordinated with an awareness of future consequence.

The work has in particular opened an understanding of change in the retail interface. Progressions in retail development have been collected into system diagrams, providing awareness of emerging user patterns, such that the planner, retailer and town centre manager can study options together.

This work shows that some critical actions such as the opening of facades to block cores, or the truncation of perimeter plots to serve block core uses, are found to have an irreversible effect on core structure. In some towns such actions had been initially perceived as positive while in others the results are beginning to have a negative effect. From the evidence in hand one can identify the towns in which thresholds are about to be reached at various stages of imminence and by comparing towns which have reached inversion with those which have not, one has been able to observe the signals of approaching limitations. The duty of a planning system to transfer such knowledge of consequences backwards to towns at an earlier stage of development thus becomes apparent. This perhaps suggests guidelines at national level, with greater dissemination of planning experience among authorities.

From an academic point of view, the work has unearthed historic evidence of block structure design from sources not previously searched. Evidence of access frameworks and early layout structures within blocks will make a significant contribution to the spatial history of the European town behind its façade.
The emerging research has already been presented at a number of conferences including AESOP Ankara 2012, WPSC Dublin 2013, ISUF Oporto 2014, AESOP Prague 2015, and ISUF Krasnoyarsk 2018. It has been presented at two seminars on Urban Morphology at the Bartlett. All of these presentations have induced discussion of considerable interest.
Acknowledgements

I would like to thank Professor Stephen Marshall and Professor Philip Steadman, my supervisors, for the dedicated encouragement and advice which they gave in the course of this work. From every meeting with them I came away immensely inspired.

I would also like to thank Susan, Jenny and Shane for their consistent support.

Research Ethics

In this research, which commenced in 2011, a number of respondents were interviewed, as described in chapter 11. All were non-vulnerable adults.

The subject matter of the interviews related to urban planning.

Where information acquired through such interviews has been referred to in text it has been anonymised and used without attribution (R), as agreed with all respondents beforehand.
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Initialisms

OSI  Ordnance Survey of Ireland
NLI  National Library of Ireland
PPG  Planning Policy Guide
ISUF  International Seminar on Urban Form

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All maps are placed head to north unless otherwise labelled.
Context and Baselines

Chapter 1

Introduction

1.01.00 Context

As small European towns adjust to meet the demands of new uses, change in layout structure occurs. In particular, change occurs in the relationship between urban street-block (hereafter ‘block’) (Larkham and Jones 1991, pp.21,74) and street. Many traditional land uses become redundant, as does the shape and layout of plots originally defined by them. Some components, which for a long time defined the organisational framework of the typical mixed-use block, no longer dominate. The basic unit of house-over-shop, which, in multiple, defined the form of the original town centre, is no longer the primary land use.

The dispersal of residence to suburbs has had a significant effect on town centres. Because family residence no longer occupies the space above the shop, it ceases to require a back garden or service space associated with this. Small-scale urban industry, which commonly occupied non-frontage space in the core of blocks, has, in its need for expansion and accessibility, also moved to more suitable space on the urban fringe. As a result the block cores of typical small towns have acquired much redundant land.

As redundant plots are re-used collectively, new models of block organisation emerge. Individual plots become re-assigned, as do blocks as plot combinations. Many of these however are still defined in their shape by the disposition of the original block and its plots. The relationships between block and street, between block core and block edge, and between trading access and service access, have all developed in such a manner that the traditional structure or framework of the block begins perhaps to serve an adjusted operation that is often very complex, in its evolving metamorphosis.

Reworking of the fabric of towns has introduced a range of new relationships between modern operational structures and traditional urban frameworks. The structure of the typical town may in fact be going through a significant reassignment, with elements of the original town assuming new roles. A full understanding of this reassignment may however be absent.
1. 02. 00 Plots, Plot Groups, Individual and Collective Decisions.

Although traditional burgage plots, interacting with the street through single frontages, developed their built forms individually, a natural discipline of scale and function formed a binding element in their layout. In most cases this layout was regulated by a standard plot width. As a result, the framework of plots, into which individual land uses freely come and go, has been robust as a clearly readable constant in the organisation of towns for centuries.

Because development is induced however by the needs of individual plot owners, decisions tend to be plot-specific, often leading plots, or nowadays plot combinations, or blocks, in various directions by the individual objectives under which they are taken, without structured planning. Because development control is passive, there is often no visionary plan to guide the broader process. The block adjusts casually rather than strategically. It could be suggested that any broader process is neither noticed nor fully understood.

Yet the framework laid down, or assembled by default, can have a fundamental effect on the form of the town, and may have limits, defined by scale or capacity, beyond which it cannot progress without broader revised intention. When it reaches such limits, which we might refer to as thresholds, it may have overtaken, and missed, the opportunity to avail of efficient strategic planning. There is perhaps therefore a clear necessity to link individual decisions with their broader consequences.

In cities and large towns, particularly where site assembly is prevalent, major redevelopment will tend to eclipse the participation of individual plots, and will tend by its importance to attract close assessment of its place in the broader city. But in smaller towns, the more modest progress of the settlement is very much about individual participants responding to change separately, with patterns which become collective through the transfer of ideas between them. Because the nature of the initiative is therefore often more obscure, in a more gradual metamorphosis, the missing linkage between decision and result is perhaps more critical.

1. 03. 00 Research Questions

This work sets out to investigate recent patterns of change in the typical mixed-use block structure of small and middle-sized towns, in order to understand the constituents of such change. The investigation is led by asking what changes are actually taking place in plot layouts, in functional relationships between plots, access routes, building form on plots, and in frontage and service structures.
A need to understand the origin and destination of these changes then leads to two associated questions. One interrogates the history of plot layout and built form, asking why individual plots have, in their formation, been laid out as they have. The other questions the destination or intentions inherent in any current process of change. Are plots evolving blindly or is there a recognisable vision or ideal state to which plot or block layout is aspiring?

A recognisable ideal state would then prompt further questions regarding its sustained satisfaction over time. Both plots and blocks are physically defined elements. Where individual change requires physical expansion, this ultimately requires structural or functional revision at a broader scale. Is the current process reaching states of saturation, to be limited by plot or block capacity, beyond which it cannot proceed without some process of larger scale taking over? Is there here an emerging conflict, in the relationship of scale between the plot as component and the block as system, which requires a review of the way in which urban settlements are organised?

In summary, the investigation is therefore led by the following specific research questions;

- What physical changes are occurring in the layout framework of plots within the typical urban block?
- Under what design philosophy was the framework of the original urban block laid out and in what way is this philosophy being adjusted by new use?
- What objectives generate change in block structure?
- Are such objectives being led by identifiable ideals or states of satisfaction in the aspirational form of plot or block?
- What patterns of compromise occur as the traditional urban block adjusts to modern use?
- Are limits on future change discernible in the currently emerging block structure?
- Is there an identifiable process by which one particular change leads to another within a predictable sequence?

To answer these questions, an investigation should attempt to trace patterns of physical change over time in the plot structure of a sample of typical town-centre blocks. It should examine change in the relationship between individual plots, between plot and block, and between block and street, attempting to determine whether or not recurring critical patterns of change exist in these relationships. To explore the consequences of change a study should identify any evidence of emerging limitations on future scale of use. The proposed research methodology, described in chapter three, attempts to address these questions.
1. 04. 00 Target evidence and study field

Study of the history of towns in the last fifty years has produced many publications on the origin of towns and on responsive urban form, often focused on case-specific solutions in attempts to synthesize modern intervention with the traditional. Absent from these is research which would identify the primary morphogenesis of layout, or the changing operational structure of the typical town, reviewing the direction in which the settlement is evolving as a system, with considered thought for the heritage of operational structure rather than appearance. Research addressing the working mechanism of town form in the late twentieth century has indeed been scarce.

Irish towns are taken as the field of study for this work. The hypothesis which generates the research questions emerges from a suspected pattern of change in a number of towns in Ireland, justifying the interrogation of examples from Ireland. An enabling assumption is made that the common settlement system of northern Europe is representative of settlement systems in the developed world and contains principles of organisation which are applicable on a global scale. It is then suggested that the Irish system has characteristics which are common to Europe. Findings would therefore have an important contribution to the study of towns anywhere. While the morphogenesis under scrutiny has perhaps been tempered with controlled management in many countries, in Ireland it has remained initially less controlled. Its examination in Irish towns thus serves the broader field with evidence of a less-bridled result.

To be placed accurately in the historic literature of the modern town (as outlined in chapters two and four), any study of newly emerging urban structure within the block must first establish the historic development of earlier structures of organisation, such as access systems. Had the history of block development in the small Irish town been previously studied, this work could start with its modern metamorphosis, but such has not been the case, so the work must first address the original formation of the block as grounded understanding, within which modern history sits. The early part of the work thus focusses on historical analysis, following which it investigates the modern history of the mixed-use urban block, developing an understanding of its continuing framework as a collective urban system.
1. Thesis Outline

Following chapter one and this introduction, in which context is identified and the research question is laid out, chapter two contains a review of literature considered relevant around the subject. This review outlines established thought from many overlapping fields, such as the academic discourse surrounding the form of block and plot, and relationships within the plot between front and back. It also seeks established thought on historic baselines, such as that on the formation of the Irish town. Here socio-political discussion is widespread but discourse addressing the particular history of urban form and space in Ireland is scarce. Chapter three explains the reasoning behind the chosen methodology which, in its response to a relatively complex research question assembles a mixed methods approach using sequential triangulation, borrowing techniques from such fields as map regression, dendrochronology and graphic elicitation. The process of case study selection is outlined, identifying six case study blocks for detailed examination against a broader comparative background of sixty-six subject towns.

Following the decision to examine the origin of plot structure, chapter four outlines from secondary sources, relevant aspects of the history of block and plot as organisers, laying the baseline for chapter five which, in the commencement of empirical work, describes an examination, from largely cartographic sources, of the development of block organisation in Irish towns from beginnings to the twentieth century. This work searches in particular for systems of organisation such as service access and other shared frameworks of co-operation outside the organisation of the individual plot. The development of back lane systems in particular is outlined, from a simple provision in Norman towns to the elaborately structured block-core systems at the end of the nineteenth century. Chapter six outlines a similar examination of towns in Britain, giving a comparative context to that which chapter five has identified in Ireland. Chapter seven then briefly outlines the circumstances which supported the modern development of Irish towns into the period which is to be studied in detail, explaining the background incentives which induced a pulse of rapid development at the end of the twentieth century and into the twenty first.

Following field-work and subsequent analysis of sixty-six towns from a broader sample, chapter eight, as a core chapter, describes the results of this analysis, revealing chronologically the existence of the process under investigation, described as observed, stage by stage. Chapter nine reviews the incidence and distribution of the process within the sample, revealing in particular the characteristics associated with change in the retail interface of sample towns. Chapter ten outlines the detailed scrutiny of six case study
blocks, describing findings from an examination of planning documents. From this documentation stakeholders are identified and chapter eleven outlines stakeholder interviews which follow, listing additional findings which emerge from these.

At this stage with evidence substantially plotted and gathered, chapter twelve reflects on this against a wider theoretical context, comparing findings with associated concepts in spatial theory. Chapter thirteen then presents a structured outline of the findings of the thesis. This outline responds to the initial research question, detailing a confirmation of the physical or factual discoveries as they relate to morphology and planning. Finally chapter fourteen positions these discoveries within existing scholarship, outlining their contribution to theory and practice with some reflection on their relevance for the future of the town.
Chapter 2

Literature and established thought

2.01.00 Introduction; Scope and Field of Established Thought

The established thought that might feed this work comes from a complex field. As the plot and block structure of the small town changes, in response to the demands of modern retail interface and user behaviour, many fields of knowledge contribute towards an understanding of context.

The field of enquiry is dominantly that of urban morphology drawing on the subjects of urban history, historical geography, architecture, urban design, urban planning, development control, retail studies, conservation theory and traffic planning. Also in the course of the work, further fields of thought, together with organisational structures not initially relevant, invite scrutiny and are introduced where necessary.

2.02.00 The Conzenian School of Urban Morphology

Much of the early study of urban morphology is of course that pioneered by M.R.G.Conzen (1960, 1969, 1988) in the study of towns and cities in Britain, which established important principles in the relationship between plot and block and between block and settlement.

Conzen observes that in the past many studies of plans have been restricted to the consideration of streets or street spaces only, a method which he suggests has its roots largely in an earlier architectural pre-occupation with the contrast between voids and solids and its aesthetic implications. He points out that the internal structure of street blocks had generally been ignored as if this were not geographically relevant. Moreover, he suggests that a certain crudeness of evolutionary approach took account merely of the broad stages of outward growth and missed the variety of phenomena that they cover, as well as the significant modern changes inside the street blocks of already established plan components, notably the traditional ones in town centres (Conzen 1960 p2).

Conzen defines the essential field of morphological study as that of the relationship between the urban street system and the distribution of individual plots within that system, each determining the form of the other. The arrangement of buildings on plots as a reaction to this relationship defines the responsive form of the town. Birkhamshaw and Whitehand (2012),
outlining the three components of Conzenian analysis: namely, ground plan, building form and land utilisation, suggest that the ground plan provides a ‘frame’ for the pattern of land utilisation and building type. Conzen (1960) outlines the process of repletion as the gradual intensification of density in an existing plot pattern as cycles of redevelopment progress.

The work of Whitehand (2009), Slater (1981), the Birmingham School and the International Seminar on Urban Form has extended the field of Conzen’s earlier work. Here Peter Larkham (1995, 1996) has developed the concept of burgage plot cycles, extending basic understandings of change and progression in plot organisation and of the plot combinations which contribute to urban structure. The extraction and illustration by Larkham (1996) of Conzen’s theory of the burgage cycle as a process is particularly relevant in the study of plot change over time, albeit in a context of traditional land use (fig 2002).

In this, Conzen establishes the concept of “choke point”. Initially a plot develops its prime use at its streetward end, where the presentation of its profile is highest, in contact with the urban street. In time it may fill to its opposite end with accumulating forms, to a state where total site coverage, without any outdoor space, is reached. This, a state of climax, is defined as the choke point. In order to facilitate further development, this state often leads to a subsequent clearance, making way for the refilling of the site at a broader scale of use, to a greater level of efficiency. The climax state frequently leads to a stage where site assembly becomes prevalent and indeed, in larger towns, where plots may merge to fill a total block of single land use.

In Conzen’s analysis of Alnwick, Northumberland, he finds specific instances where many of the burgage boundaries, formerly defined by walls or fences, have disappeared, with areas of combined plots being treated as one unit (Conzen 1960 p92). This commonly affects the
burgage tails and their replete building fabric (ibid p94). Conzen recognises in Alnwick that the pattern of strip burgages is generally too fine-grained to allow redevelopment in accordance with modern building and planning standards. Under modern conditions the pooling of plots is often followed by wholesale clearance through compulsory purchase on the part of the local authority to facilitate subsequent redevelopment (ibid p94).

Conzen defines land in this transition as urban fallow, unused at the end of the burgage cycle but facilitating the initial stage of a succeeding redevelopment cycle.

Marek Koter (1990) extends the study of the burgage cycle, developed by Conzen, into modern plot structure, in one of the few studies of the latter-day progress of this cycle. Although Koter’s work is confined to a specific settlement in Poland, his findings are applicable to many European towns and his conclusions form a stepping board for work in the modern settlement structure of Britain or Ireland.

2.03.00 Common Research Methods Established in Urban Morphology

Conzen’s work led the development of research methods in urban morphology, which in the early stages were largely cartographic. Such methods have broadened to link with many disciplines, although the literature still draws on cartographic methods as the most common in the interrogation of process and change over time (Kropf 2011). Kropf, quoting Goethe, points to the essence of morphology as the comparison of component parts and their relationships, together with the comparison of different stages in the development, growth and transformation of forms (Kropf 2009).

The field to be interrogated in our research, though clearly definable as belonging to urban morphology, extends to areas in which recognised methodologies from other sources suggest a mix of methods (described in chapter 3). In recent years the literature on methods of morphological scrutiny has broadened considerably in a developing respect for mixed sources (Denzin 1978). The use of mixed sources to locate evidence by techniques of triangulation has an emerging popularity (Jick 1979 p602, Field and Morse 1985, Yin 1994, Groat and Wang 2002, Minoura 2015 p80).

Conzenian techniques such as the observation of historical maps, plans, documents, records and inferences based on field observation, can of course be continuously revisited and traced easily to great levels of detail (Birkhamshaw and Whitehand 2012 p5) for different sources of evidence. The stability of such databases as baseline is unquestioned and
therefore used throughout this work. Conzen (1988 p254) favours smaller towns for the study of morphological process, as evidence can be measured with an understanding of the total settlement. Much of Conzen's work was carried out in the town of Alnwick, Northumberland, which has a population (2011) of just over 8000 inhabitants. Towns as case studies have a long-respected part in the development of empirical evidence. Eisenhardt (1989) suggests that theory developed from case study research is likely to have important strengths like novelty, testability and empirical validity which arise from the intimate linkage with empirical evidence.

Our work brings together interviews and cartographic observation; two established research methods (Gaskell 2000 p39, Denscombe 1998 p111, Kropf 2011 p397, Kropf 2018 p66) not often used together, but here combined with recently developing techniques of graphic elicitation (Harper 2002, Crilly et al 2006 p347) in order to trigger the observation of change.

2. 04. 00 Origins of the Town; Factual Discourse

Whatever research methodology is followed, the history and development to date of block-core urban structure should be reviewed as background to any path of investigation. The understanding of any aspect of urban design must draw from the history of its formation (Hebbert 2014). From the broad literature on urban history, this review should focus on block organisation, or access and service structures within the block, at the scale of the town. On this particular aspect, established thought is scarce. Within international literature a number of sources on the early history of settlement do explore block structure (Burke 1956, Mumford 1961, Morris 1972, Kostof 1991). From these, for the work in hand, one merely seeks agreed fact as baseline, or accepted context (4.02.01).

If Irish field samples are chosen (3.05.00), one must accept that, within the volumes of political and social history there had been an absence of early research on the spatial history of towns in Ireland. The outline form and location of settlements has however attracted some gathering interest in the twentieth century (Curtis 1938, Bradley 1985, Harbison 1988, Whelan 1994, Andrews 1995).

Two factors in particular appear to have been responsible recently for a more intensified interest in research on Irish towns. One is the amount of urban archaeological excavation necessitated by the pulse of urban development in recent decades. Here research has been forced by the findings of rescue archaeology. In Dublin the Wood quay excavations of 1974-80 led to significant published works (Wallace 1992, 2016, Simms 1990, 1996), these in particular detailing findings of early plot layout in Irish towns and leading to significant
discussion on the shape of settlements. This discussion has also interacted productively with the European field of similar work, particularly in Scandinavia (Tesch 1996 p116, Andersson 1996 p102) (4.02.01).

The other generator of interest, in Europe as in Ireland, has been the series of historic atlases of European towns and cities, extending its coverage recently to many Irish towns (Bradley 2000, O’Keeffe 2003, Gallagher 2008, O’Flaherty 2010, Hurley and Whelan 2014, Prunty and Walsh 2016).

The fact that Norman towns in Ireland were similar to their relatives in Britain allows the work of Beresford (1967) Colin and Rose Bell (1969) and Hartwell and Pevsner (2011) to be applied with relevance. The work of Beresford, examining the role of Edward I in the design of towns in the thirteenth century, is particularly interesting because of the fact that the leading towns of the Irish settlement system are Norman, with origins close to the time of Edward (Camblin 1951, Whitehand 1969, Morris 1972, Graham 1993). The Romans of course never extended their settlement to Ireland (Moss 2014 p365) but many of the layout principles applied to Roman settlement in Britain had later influence on Ireland (Andrews 1995 p25).

Until recently it had been suggested (Butlin 1976 p97) that very little addition of significance occurred in Irish towns in the eighteenth and nineteenth centuries. Research now suggests that many regularly planned additions to Irish towns took place during this period (Proudfoot 1993 p235, Horner 1995 p102, Whelan 1997 p187, Loeber 2014 p400). These follow interesting relationships with towns in Britain of the same period (Bell and Bell 1969, Cherry 1989, Leach 2009).

To understand the development, observed and not observed, of town form, maps become instruments of particular importance to this work, as much of the field has not been searched before. The value and range of Ordnance Survey maps in Ireland and Britain is unique and the coverage of these has been usefully documented (Andrews 1974, Horner 1995, Whelan 1997). When the examination of early maps requires supporting information to explain the significance of place, particularly in the maps of the 1836 series, the topographical dictionary of Lewis (1837) which coincides with the first series of Ordnance Survey maps, is of immense factual value as are nineteenth century town directories (Pigot 1824, Slater 1846, 1894). Into this can be linked the observations of the estate papers of the landed gentry (Bence Jones 1978, Moore; Landed Estates Database). While the input of the gentry into the making of towns has limited spatial documentation, the broader socio-political reason for the settlement structure has been given extensive thought and research (Butlin 1976, Hood 1995, Horner 1995).
The development of the road network in the late eighteenth century becomes particularly important for the development of modern settlement structure (Killen 1997 p209) and for the transfer of ideas, particularly in the West of Ireland (Jones Hughes 1959). This is also addressed in factual history (Broderick 2002, O’Keefe 1996, 2004, O’Dalaigh 2012, Whelan and Mullin Burnham 2014). However, the works of both Broderick and O’Keefe concentrate primarily on roads as infrastructural linkages between towns, and on traffic regulations, unfortunately with little attention to urban street systems.

2. 05. 00  Circulation, The Modern Town, and Traffic Theory

The operational structure of towns was heavily influenced in the twentieth century by the growth of car use and the reorganisation of traffic. This would have a major influence on the relationship between street and urban block in the rank of towns which our work examines. From an extensive field of theory, mainly addressing cities, the literature on traffic management in smaller towns becomes quite focussed in the latter years of the century.

2004  A typical Buchanan plan, in this case for Coventry, with ring road and central pedestrian precinct  (MoT 1963 p75)
The proposals of Colin Buchanan (MoT 1963) addressing congestion in British towns, had a significant influence on the management of circulation, taking traffic out of town centres to arterial networks which served towns from the perimeter. Buchanan’s principles were followed as best practice in Irish towns in the same period. The by-pass and the ring road became common features of the edge, while pedestrianised streets became features of the core (fig. 2004). Hall (1975 p39) actually credits Tripp (1942) for the idea of separating arterial roads from streets in allowing through traffic to move more freely on less congested distributor routes, having less contact with its surroundings (fig. 2005). Total segregation was becoming the only acceptable basis for urban form (Hebbert 2005 p43).

Fig. 2005  Principle of roads hierarchy by which roads conveying faster traffic (2) are separated from surrounding streets, in particular from street A (After Tripp A. 1941 p378)

Hall (1975 p125) credits Buchanan as being a pioneer of the environmental dimension, presumably because of his intent to preserve the physical core of towns. However while the pedestrian street may be a tranquil place, Marshall (2005) points out that, because the high street originally developed its importance from its role as a primary route, the removal of traffic, removing as it does the route function, tends to remove importance from the street, and within the new road hierarchy, where the faster arterial road becomes the major route, the traditional street assumes the role of a minor access space. The new hierarchy thus creates an inverse relationship between activity and urban place, turning the traditional town inside out (Marshall 2005 p4).

Historically the route in the form of a street had been the generator of urban form. The separation of route and street thus has a profound effect on the street, the reason for its existence, and its significance as a place. Tripp, in his case for the idea of separating arterial
roads from streets, continually draws from the example of the railway (Tripp 1941 p389), conveying movement at a faster rate from point to point, ideally fenced from and without any on-route contact with surroundings. Marshall (2005 p4) observes that even Buchanan (1958) viewed Tripp’s radical ideas with some qualms.

The form of the street with its associated spaces has an extensive urban design literature (Favro 1994, Maughtin 2003, Meta 2014, Vaughan 2015). The social activity of the street has also an extensive literature embracing many additional fields (Jacobs 1961, Cahill 1980, Bentley 1985, Southworth and Owens 1993, Gehl 2001, Sevtsuk 2016, Barthelemy 2017). Following its rejection in the early twentieth century by the modern movement the street has returned as a leader of urban form, and since then has gone through many explorations in design. The evidence coming from all research suggests multifunctional activity as the important ingredient of successful streets. Inherent in this is the support and back-up which the block with its plots provides for the street. The obsession with street-making and the expansion of streetspace relative to street-block support space may however prompt more balanced consideration (see 2.11.00 p).

Within the realm of traffic, the concept of the car park, and its relationship to the retail contact interface, emerges in this research as a prime component in the formation of urban place. The history of the off-street car park is particularly important. In this the work of Longstreth (1999) explores a relevant field, detailing the development in the USA of the sometimes critical relationships between the car park, the supermarket, and the park-and-shop cluster. One is reminded that the development of the domestic refrigerator, first introduced in the USA in 1925, was almost as important as the car in its effect on the structure of urban lifestyle (ibid p80, Kinneally 2015) facilitating, with the supermarket, the development of bulk shopping, which in turn required the car. In American examples the car park was generally developed on free ground, not within urban fabric, but comparison with Irish case studies becomes particularly interesting (12.01.02).

2.06.00 Front, Back and Retail Interface

As one might expect, the significant difference between front, as presentation space, and back, as service space, is regarded as particularly relevant across the retail interface. The retail interface between shop and street has an established historical discourse (Cornwall 1962 p68, Swanton 1999 p119) which has been applied to the Irish context (Rothery 1978). Closely associated with the interface of the shop is that of the shopping passage and now the shopping centre, particularly the social aspects of this interface (MacKeith 1985, Eiland and McLoughlin 1999 p3).
Current popular theory suggests that all architecture is organised according to an elemental language of basic bodily experiences (Otero-Pailos 2012 p148). In the figurative sense (Taylor 1992) this theory has clear significance when applied to a retail interface as it signifies the functions of front and back. This relationship emerges as particularly relevant in the context of our work. The transitional boundary between public realm and private plot occurs over a social façade line which has been extensively analysed (Sennett 1997, Bentley 1985, 1999, Shane 2005, Vis 2018). This interface is surrounded by a domain of influence on both sides commanding a broader boundary, where activities unfold and connect (Kilbaugh 1996, Borden 2000, Gehl 2001). The distinction between front and back has also been established as an important psychological interface (Alexander 1977 p302, Hillier and Hanson 1984 p160, Lefebvre 1991 p314).

2.06.01 Social and commercial transect across block

In some cases front to back transition can be carried across a block by a combination of plots (McKean 2011), or through a number of sub-plots or secondary uses.

2006 Edinburgh 1890 (Edina Digimap)

James Craig’s plan for Edinburgh, 1767, (Bell, 1969 p93) shows a clearly organised hierarchy of use within the core of the closed urban block, such as in a typical block between Queen Street and Hill Street (fig 2006). The social transect between the frontal residence, the supporting mews, servant residences and access routes formed, across the block, a carefully managed urban structure, enhancing with precision the relationship between classical front and functional rear, both in urban form and social distribution (McKean 2011). The urban form reflects directly the social transect.
A similar receding transect is carried across a number of residential blocks surrounding Belgrave Square in London. Here the importance of the square - the centrepiece of Belgravia since 1823 - is reflected in the measurements under which surrounding spaces recede from it. If one takes a transect south eastwards from the square to cross Eaton Place, or a similar transect north eastwards, the floor area and embellishment of the houses show a subtle reduction with distance from the square (fig 2007).

02. 07. 00 The Plot

While the morphology of the urban plot has been extensively explored by Conzen and the Birmingham school, the early development of the plot in the history of the city also has a significant literature (Bell 1969, Morris 1972). The plot-based morphology of residential land use is widely discussed (Muthesius 1982, Girouard 1990, Bradley 2000, Campbell 2010, Tarbatt 2012).

Howard Davis (2009) has developed international comparison of the relationship between residence and retail uses on single plots in the context where such plots merge and fuse to form urban systems. This work advances an intercultural understanding of mixed-use plots worldwide. The process which our work examines is largely about the changing relationship between these two functions on single plots. The work of Davies allows us to place the relevance of our evidence in an international context.
The less formal layout within which plots of smaller towns or the semi-rural landscape establish nucleation in Ireland may also be placed in a context of similar forms from an international perspective. The work of Dehane and De Meulder (2003) establishes principles of functional cohesion in the individual distribution of plots adjacent to small villages in Belgium. Because their case studies are semi-rural, they advance relevant observations on low-density block structures, which have clear association with those of towns in Ireland.

The theory of plot-based urbanism as an appropriate form of urban seeding has seen popular recent development (Porta and Romice 2010 p35, Murphy, 2012). This has clear relevance at the scale of the smaller town where individual land plots still multiply to form the block. The variety of land use facilitated by plot-scaled flexibility perhaps still forms the essence of successful towns. The recent work of Tarbatt (2012) explores the suitability of plot-based urbanism in the context of modern land use, although his work concentrates on plot series without relationship to the organisation of the block. Whether or not plot-based urbanism freely accommodates increased scale and floorplate expansion, as a sustainable urban progression, is a question to which the evidence of this thesis contributes significantly.

2.08.00 The Block

The importance of the block as organiser of urban land use and access systems is well established in planning theory. Habraken observes that ‘the city block is a stable urban structure, typically remaining constant for centuries. Within its periphery, over time, many buildings are completely replaced or transformed’. The city block provides continuity. (Habraken 1998).

Leslie Martin suggests that the pattern of the urban grid of roads and blocks in a town or region is a kind of playboard that sets out the rules of the game. The rules outline the game; but the players should have the opportunity to use to the full their individual skills while playing it (Martin, 2000, p312). It is only through the understanding of (the grid as) a structuring framework that we can open up the range of choices and opportunities for future development (Martin 2000, p311). The rules which define the size of plots in the plot series of a street-block or series of burgage plots have a very practical logic, common in all countries of medieval northern Europe (Proudfoot 1994, Graham 2000 p131).

In the relationship between block and plot, the form of the traditional block may define the form of the plot, but the reverse may also be so. Habraken (1998) observes that a larger block will tend to have more plots rather than bigger plots. This perhaps suggests that the
plot is the less variable form, having a self-defining discipline, with shape deriving from function, which the organisation of the block then accommodates.

At the scale of the city however the block may be a number of things. It may accommodate a single building, or it may be a frame of buildings with regular street frontages around four edges (Kropf 2006 p12, Studio REAL 2011 p110). On the other hand, it may be less obvious in form but more established in structure with an interface of trade as its front line and a service core as its back-up, as it might appear in our research, on one side of a single-street town. Though some forms may be less complete in identity, they may in structure and flexibility be more robust.

On the form of the block, the work of Arnis Siskna (1998), looking at blocks in Australia and the USA, is particularly significant, as is the work of Vialard (2012). Although Siskna’s work concentrates only on grid blocks, it has made important advances on the understanding of plot multiplication and subdivision, in particular on the workable dimension of half-blocks. While much thought is focussed on the standard orthogonal block layout, the theory extracted generally applies to blocks of any shape. Although neither Vialard nor Siskna address the front-to-back burgage plot in its role as the maker of blocks, Siskna acknowledges plot orientation by his identification of the service route through the block spine which by implication defines two opposite block edges as fronts (fig 2008) (Siskna,1998 p279).

Fig 2008 (After Siskna 1998)
(Alley outlined in colour indicates tail seam of plots fronting to Madison St)

Where the block is edged by a line of plot facades, the transect from centre line of street to tail seam of plot defines a supporting system. Until recently there had been relatively little research given to such transect, although Ellis, as early as 1978 (p118), used the term ‘back-up structure’ when discussing the difference between the front and back of plots. The
more recent work of Kropf (1996) explores this back-up frame as an essential support for the street frontage.

2.09.00 The Perimeter Block

The perimeter block, where built edges surround a central space, has become the standard modern fabric in many European cities (Frampton 1978 p317, Bentley 1985 p14) (figs 2060 2061). Here the urban street is defined, as front, by the block edge-facade, while the core becomes, as back, the shared space of a residential community, surrounded by a perimeter building of single creation, which frequently has little ground floor contact with the street. Kropf (2006) criticises the use of perimeter block forms to make cities, arguing that in these forms the essential traditional relationship which the street makes, through its edge, with the supporting plots which serve its perimeter, is lost. Kropf talks about the street as the primary module of urban form, pointing out that his term ‘street’ includes the domain of land to either side to which the street space gives access, presumably meaning the traditional full plot depth behind the facade. The success of the street is dependent on factors beyond the built form which defines its edge. Clearly the street rather than the block is the leader of urban form. Porta and Romice (2010) suggest that development should never be designed block by block, but rather street by street.

Fig 2060
The perimeter block, enclosed with a perimeter building of multi-occupancy, creates a definition between public and semi-private, not between public and private. Across the built perimeter, an outer public and an inner semi-public façade are created (figs 2060 2061). The core of the block is no longer divided into private, individually controllable sites. Instead it serves the block with common use. Kropf (2006) illustrates this when he examines the plot series which runs from the street axis to the notional tail seam. This runs from public street front, through subdivided private building, to semi-private core-block space.

Much research which addresses the urban block tends to focus on larger cities. By implication this tends to address blocks of common use as distinct from blocks of mixed use found in smaller settlements. Samuels, Panerai et al (2004), in one of the most inclusive works in this field, trace block types from Haussmann to the new urbanists, but with a concentration almost exclusively on residential needs as generators of block form. This work considers the early perimeter block as the palette for Haussmann’s intervention in Paris, but leaves its form or subsequent progression for further study.

2. 10. 00  Plot Amalgamation, Subdivision, and the Control of Urban Form

An efficient urban block might be expected to provide stability at its edge, responding to community and identity, but should allow some flexibility in its internal structure to accommodate the evolution of built form (Conzen 1988, Llewelyn-Davies 2000, Vialard 2012, Tarbatt 2012). Vialard suggests that performance can be evaluated in terms of the ability of a block to facilitate change in use, while responding to the connectivity and intelligibility of a city as a whole (Vialard 2012 p2)
Perhaps the facility for change in the un-closed block of a burgage plot-series is different to that in a gridiron block. In the un-closed block, building form is largely determined by the front edge. Because this is the only defining edge, the subdivision and amalgamation of plots has greater freedom (fig 2062).

In the changing structure of a block, plot amalgamation is more common than plot subdivision, although both do occur (R16). Control of plot subdivision by planning authorities is not common in Ireland or in the UK, as such practice, popular in areas of retail comparison-goods outlets, increases diversity, and is therefore regarded as positive. Tarbatt (2012 p22) contrasts the free subdivision of plots in the UK with that in the US and Australia where, in the latter cases, the regulation of subdivision provides the planning authority with a means of controlling form.

2. 11. 00 Permeability and the Block

The relationship between size of block and urban permeability has occupied much discussion since the nineteen sixties. A popular school of thought has favoured smaller blocks. It has been suggested that the most destructive failure of urban planning lay in the emergence of the oversized urban framework (Baird, Feeley, Russell, Wong, 2010 p27). Those who argue for the importance of permeability believe that smaller blocks, having a greater density of frontage and route choice, encourage greater levels of pedestrian activity (Krier 1984 p43, Bentley et al 1985 p12, Carmona et al 2003 p86).

For half a century since Jacobs (1961), city fathers, in reaction to the oversized block, have frequently encouraged the creation of cross-block routes linking streets that had not been
linked before. In an example which Jacobs cites of an urban fabric that is not sufficiently permeable, the block which she uses is eight hundred feet, or 243m long (Jacobs 1961 p191). The average block-length in a European town however seldom exceeds 200m (Komossa 2002).

Although the reasoning in Jacobs’s argument is understandable, it could be suggested that the process of increasing route options has perhaps two observable effects in smaller towns. Firstly it spreads or diffuses pedestrian activity over a greater area of streets (12.01.04) (fig.1252), thus reducing its level of concentrated activity. Secondly it reduces block size, as blocks become progressively smaller, fragmented by public routes. The capacity of the block to provide a core service to its perimeter is thus reduced. The examples which Jacobs illustrates (Jacobs 1961 pp194,195) do not show block cores, nor is the core considered, because her New York examples come from residential areas where only the crossing avenues are dominantly commercial. In the centre shaft of the block where residence predominates, depth-of-plot as support for the street would not be as important.

One can see the recent beginnings of a school of reactive caution which suggests a need for balanced measurement between permeability and block fragmentation. Vialard suggests that as more streets appear and incisions into the block become over time additional streets, the stability of the original street network is threatened (Vialard 2012 p12). Pedestrian activity is perhaps generated by a complex range of circumstances and one cannot assume that the simple provision of more streets increases activity (Sevtsuk 2016 p104). The established street as the backbone of a route structure is something on which the city depends for stability, in its contact with diversity (Southworth and Owens, 1993, Vaughen 2015, Barthelemy 2017).

2. 12. 00  *Flexibility, the context of change and the urban frame*

For small towns to keep pace with market demand the urban frame must accommodate flexibility for the individual trading plot (Convery 1999). In an Irish town such as Loughrea (fig 2065), the original burgage plot offered both the stability of communal order and the freedom of individual complexity in a system which facilitated variety by diverse participants. Burgage frameworks collected without strict imitation, where individual plots followed just signals of shape and structure. A natural discipline of scale helped to regulate and co-ordinate this structure. If such system now needs to adjust to change, in response to increased trading scale, it may not be able to carry plot size as a constant but may carry flexibility through such aspects as shape. For modern change however the frame itself must be flexible, capable of being multiplied and subdivided, without the loss of readable structure.
Norman towns in Ireland tended not to depend on natural features for defence but instead sought their own ideal form on level ground (Bradley 1995, Graham 2000). The form into which they settled was defined by a simple orthogonal layout. Where such settlements have been occupied by different scales of land use over time, orthogonal plot patterns have provided a consistency, sufficiently flexible to accept widely different fields of use and activity, without loss of layout structure. The blocks of orthogonal plots in some settlements have a layout freedom which has attracted modern floorplates to the centres of towns with ease. In other settlement types, circumstances can be different.
Ballinasloe and Ennis provide a particularly clear example of this distinction. Ballinasloe, represented on two sequential diagrams; (Fig 2068 1910), (Fig 2069 2012), has an orthogonal layout with a central street as spine, flanked by originally burgage plots which address it at right angles. In the 1910 image the sites are regularly narrow, with a broad variety of rectangular structures filling each, in response to the individual needs of their frontage trade. The discipline of the urban frame is obvious, as is the flexible variety of arrangements which it facilitates. In the 2012 image of the same segment, some of the original plots are unchanged. Others have increased in site coverage. Some have joined with adjacent sites to increase street frontage, and many have increased open service space. A general increase in the footprints of both internal and external space is noticeable with fewer small structures and fewer boundaries. This of course is a direct consequence of increased scale of use.

Ennis is represented by two similar diagrams illustrating also a progression from early plot structure (Fig 2070 1910) to its recent state (Fig 2071 2012). This town has a different origin and structure to that of the first example. Although the party walls of individual buildings are largely perpendicular to the adjacent street, plots do not relate to each other orthogonally as in the burgage structure of Ballinasloe. While similar progressions may be observed in the transition from the early to the later state, such as the increase in ground area by individual internal and external uses, these have not been defined or led by a framed plot discipline. As a likely consequence, the expanded plot combinations are more individually structured and there are fewer of them.
In the first example the orthogonal frame has been sustained, as there has been no reason for it to change. It is likely that in time further developments in this frame may require further boundary adjustments which the orthogonal arrangement of the frame will continue to guide and accommodate. In the second example however such signals for further shape do not exist because structures and spaces have individual shapes. The degree to which any shape might combine with an adjacent one, to form a more advanced shape, is thus limited, as coordination is not guided by any layout frame. It could be suggested that here plots will not as easily progress from this state in response to future use demands. Siskna (1998) shows that in the urban grid layouts of cities in Australia and the USA, orthogonal urban blocks facilitate subdivision and easy re-disposition of plots, thereby providing a system which is capable of holding its basic frame arrangements through many changes of scale and use.

Steadman (2006 p127) concludes that most plan shapes of rooms within buildings are rectangular, and this preference is more prevalent where large varieties of spaces must fit together. He concludes that spaces of different dimension in different directions tend towards the rectangle simply because the rectangle is itself the most dimensionally flexible form in its capability to fit or be packed against other rectangles, without space left over. The same would apply to all subdivisions of ground use, whether or not enclosed by building.

Steadman (2006 p125) has tested his theory by assembling a range of common shapes in clusters or repetitive sets, which demonstrate their respective abilities to produce a flexible range of tight-fit combinations. The necessity for the most efficient fit to have adjacency in no more than two directions leads one to either the square or the rectangle. While the square, being equal on all sides prohibits the tight fit of different scales and sizes, the rectangle has the flexibility to fit the shape by varying the dimensions of adjacent sides around the area enclosed. Steadman thus concludes that shapes fit together most efficiently in an orthogonal relationship and the orthogonal frame which is most flexible in two dimensions is the rectangle. Subdivision and multiplication of the rectangle produces further rectangles. The layout of a snecked ashlar wall-face serves as a very effective diagram of the concept, (Fig 2072), requiring the least number of filler units which are not part of the primary elements. It requires none at all.
2. 13. 00 Change, Scale and Time

The study of morphogenesis identifies change, and the nature of change. The study of change involves the study of process rather than product. This is manifest in the need for a time consciousness in urban design (Thwaites, Porta, Romice and Graves 2007, Torma, Griffiths and Vaughan, 2017) linked closely to the concept of plot-based urbanism as explored by Porta and Romice (2010).

Where change takes place in urban tissue in response to the needs of its users, this is frequently associated with change of scale (Rossi 1982, Boeri 1998, Rao 2012). Such change must presumably be associated with expansion of use. Lefebvre (1991 p73) considers a city to be a space which is fashioned, presumably by use over time.

It is an established principle of urban development that participating plots look to find stability of context, or the benefits of certainty, in surrounding urban plans (Carmona et al 2003 p68). If individual investment is not protected by overall strategy, casual change can occur with nobody in charge (Shane 2005 p6). Clearly structured plans with clear implementation intentions guide change where the physical form is foreseen and reasoned. The city can carry with it strong elements of common structure which maintain overall form through change, such as the street. The city thus depends on the stability of the street, for contact through diversity (Vaughan 2015). This discourse becomes acutely relevant in our findings (12.03.05).

2. 14. 00 Documented Gaps in Research on Urban Morphology

In the literature of urban morphology one frequently finds statements referring to the absence of research on particular aspects. Kealy and Simms (2008) refer to the absence in Ireland of research on urban morphology which embraces sufficiently the disciplines of architecture and planning. They point to consequently unexplored findings in this crossover. What is happening in the Irish context may be locally unique but, as it is induced by common European circumstances, is likely to have direct and indirect relevance to urban studies worldwide, touching many concepts.

The progression in the relationship between block and street which this work sets out to explore has not been mentioned in urban design research in Ireland up to now. If the findings of the work show the progression to have an applicable relevance, and to be significant in distribution, the research would represent a significant contribution by morphological research to the practice of planning. Study of the operational structure of the
town behind the street facade has not featured in Irish morphological research. Whether to be added to historical record or applied to planning practice however, this unopened knowledge of block structure is a significant missing part in the understanding of the European town.

Whitehand (2009) refers to the importance of examining urban morphological subdivision not just in relation to the history of the urban landscape, but to the way in which this is governed by an underlying process of decision making. Whitehand points out that this examination is critical, but largely unexplored. Michael Batty (1999) similarly cites the linking of structure to process as an essential component in the study of urban morphology.

Our analysis, being essentially metrological, applies a form of scrutiny common in the study of mediaeval plot subdivisions, not previously applied to modern land-use. Slater (1981) does use a methodology based on comparative measurement in his analysis of burgage plot amalgamation, but the models of site assembly and the functional demands which cause these are not explored by him. Similarly Beresford (1967) has studied the relationship between town plan and block, but not between block and plot to the same detail.

2. 15. 00 Literature at the Outset

The above literature review represents an introductory investigation of relevant thought towards the setting of context. It does identify some obvious omissions. The literature of political history in Ireland is abundant, but only at the beginning of the twentieth century does any narrative on the economic and social history of urban form appear. The literature of historical geography begins to address the form of the Irish town in the latter part of the twentieth century followed by an understanding of urban morphology. Seldom is such understanding applied in practice to the development of the modern town and seldom is that development tested against morphological principles.

An abundance of literature on the visual heritage of the town has, indeed laudably, led to the protection of its fabric. Behind the façade however little research on the operational structure of the town has been carried out. It is here that the work of the following thesis seeks to reduce that gap both in the history of development and in its recent metamorphosis.
Chapter 3

Methodology

3. 01. 00  Introduction; Nature of Evidence Sought

If a new form of individual plot-use is forcing a change in the operational structure of the urban block, is this change occurring with a pattern that is common to many towns? If so, in what way can this best be identified, measured and confirmed? The methodology applied here is led by the nature of evidence needed to answer the research question.

If one needs to locate, observe and measure a new process, the existence of which may not have been previously observed, its tracking suggests first a form of measurement that is physical. This should be primary in nature, quantitative, and not reliant on established opinion. Map regression, or comparative chronological analysis using maps, is therefore, in this work, used to find the process initially. Map regression is described as a fundamental tool in urban morphological analysis (Kropf 2011 p397, 2018 p66), where overlaid maps are used to trace with measurable accuracy the progression of change between past place and present place.

In this tracing one expects to find the first or primary source of evidence. The town is the text from which one examines the narrative of its making. This is commonly referred to as an historic geographic approach. The evolution of town layout is examined, using map overlays, supplemented by any other sources that explain its formation. Its final state is then examined by field observation of present place, confirming the current form of that already called up by maps.

Although cartographic study may illustrate the critical formation or allow the critical formation to be traced, it may not of course explain the circumstances which caused that formation. For this therefore use is made of records, or recorded discourse, documenting change and its objectives, adding an understanding of the reason for change. Recorded documentation of change is thus searched as a second body of evidence. Statutory records of planning and development activity are used to provide this evidence. These are examined in detail for a selected set of towns.

Records of planning proposals subsequently lead to the presence of stakeholders as observers, proposers, adjudicators or participants who have given thought to the circumstances of the proposal. Evidence of the process may thus be further enhanced by
contact with such stakeholders, opening memories of intentions neither recorded nor leading to physical results, but being evidence of the direction of the process, or of its sometimes unachieved aspirations, or of compromise. From the planning records therefore participant stakeholders are identified and a sample number are interviewed to extract further observation, which is added to the understanding assembled from earlier stages. Extraction of evidence from different sources requires different research methods. A mixed methods approach is therefore used in order to collect findings from various fields. These findings are linked by techniques of triangulation.

3.02.00 Triangulation; Locating the Process

Triangulation is a research methodology in which a phenomenon may be investigated from a number of directions of enquiry which converge in a triangulating fashion (Grout and Wang 2002, p346). The concept is drawn from that of navigation or military strategy where a place or object is located by cross-sighting through a number of bearings. In this work each method is used to focus on relevant information which is then tested from another viewpoint, exposing, by another method, further, perhaps previously unseen, observations of more detailed focus. As in basic principles of geometry, multiple viewpoints allow for more accurate judgement, engaging different kinds of data, bearing on the same phenomenon. (Jick 1979 p602).

In the evidence available to our research, built form, as mapped, may illustrate but not be relied upon to explain. A stage of change from one form to another can be explained by written record of the design discussion. Memory of objectives not achieved, recorded, or even attempted can be added from the experience of participants. Consideration of these three sources together can give, in a triangulated fix, a comprehensive understanding of the process. In this consideration both quantitative and qualitative research is used. The first component is quantitative, the second engages both, and the third is substantially qualitative.

If a structure is interactional, its full understanding demands the use of more than one method of analysis (Denzin 1978 p474). In our case the interaction is that between the objectives of the stakeholders and the limitations of the circumstance. Each method has a descriptive potential of its own but the explanatory potential is best served by combining methods to give a composite fix on evidence (Yin 1994, Groat and Wang 2002, Minoura 2015 p80).
3. 02. 01 Sequential Triangulation

The form of triangulation used here is commonly referred to as sequential triangulation (Jick 1979, Field and Morse 1985) in which each stage expands the findings of the previous stage, identifying the potential location of further evidence. First of all the examination of towns from cartographic overlays establishes a baseline source, suggesting the most valuable areas of evidence within that source. It also identifies specific towns as artefacts of relevant morphological interest to be visited for observation. In the course of such visits, suitable case studies are then identified for examination in greater detail as the next source of evidence. From the filed planning records of these case studies, stakeholders are identified who are likely to provide further evidence. In this process each stage adds detailed evidence to that already assembled, but also triggers potential evidence in subsequent stages, towards providing an understanding of the phenomenon from many distinct sides.

3. 02. 02 Assembly of a timeline

As it is extracted, the progression or metamorphosis being searched can be laid out and understood as a timeline, as each stage is compared to an earlier, or later, stage elsewhere, for subsequent assembly in chronological order. As the timeline becomes clear, more detailed interrogation is prompted in certain areas in order to supplement gaps within it. Overall, blocks and plots are not regularly similar enough for pre-assigned comparative analysis. Instead an instance of section of the progression is identified and compared to a searched instance in another town or block or elsewhere in the same block, collecting, by comparative analysis, a pattern of change traceable within a range of different towns by the similarity of its stages. From this, one assembles the timeline of a common identifiable progression.
3003 Use of the cross-matching technique from dendrochronology (3.02.03)

3. 02. 03 Techniques borrowed from dendrochronological analysis

In the search for a common sequence among stages of the progression, stages that are recognised as common to a number of towns are first located in each town in the order of their occurrence. These are then compared by a method that borrows technique from that applied in dendrochronology (Douglass 1914). In this the sequence in which these developments occur is lifted from each town, and laid out in linear form or strip, as a timeline. Fig. 3003 shows typical timelines from left to right for sample towns A, B and C. In each town, development stages which relate to retail interface are identified (grey), within which one can identify stages which relate to the block metamorphosis that one seeks. The strips may then be laid parallel to each other until particular stages, which relate to the progression sought, are found to correspond, (blue) showing whether various stages are ahead of, or behind, each other in timelines. Where sequences, or parts of sequences, correspond, one can study the overlaps to identify the most common sequences, towards the most common chronology. The principle is referred to in dendrochronology as cross-matching or bridging. In time, and over a sufficient number of samples, a sufficiency of cross-matches locates a common sequence of stages as a reliable chronology. These stages can then be numbered towards the creation of table 8156 (chapter 8). The frequency of stages is recorded in figs 9001, 9002 and 9004 (chapter 9).
This correspondence can be tested until one is satisfied that it describes a reliably established sequence to which one can fit subsequent parts as confirming evidence, referred to in dendrochronology as anchoring. Many towns will show no cross matches whatsoever, but in a sample of 66 settlements, the sequence extracted and described in 0837 (chapter 8) offers some reliability.

3. 03. 00 Sources

3. 03. 01 Cartographic Sources

The first of the three elements of triangulation is the artefact; the plot and its representation on the map; reliable as a starting point because it is physically measurable, independent of the bias of written record, or of the opinion of observers.

For this the maps of the ordnance survey form the primary source. These were first produced in the 1830s at a scale of 1;1056, large enough to show original block forms, still substantially in their first formation, prior to subsequent development. Block origin and process of emergence can thus be examined. Although the first map edition does not show plot subdivisions, it does show built form, by which the plot subdivisions can be traced backwards from the second edition which begins to appear in 1850 (see 05.01.00).

The next edition from 1870 describes a phase at which block development reached a substantial level of organization, and from this phase initial operational models may be identified. At this stage also, written information, explaining form, becomes available through directories and administrative documents governing land use change. Further phases of map revision in the final years of the nineteenth century, in the 1930s, and later in the twentieth century, give significant points of measurement.
3005 Map regression; use of overlays to study process of change

In a typical block under scrutiny, early maps are thus used to examine the original layout of plots, and their shapes. Comparison between these allows the identification of any consistencies in typology and distribution of built form and layout, exposing patterns which repeat themselves on different plots under different management. The progress of these plots is examined, observing changing shape, the fusing or subdivision of plots or the addition or subtraction of building form (fig. 3005). From supporting records the reasons for change in shape and layout can in many cases be established, attempting to identify the
forces which cause these changes. A similar methodology has been used to study plot metamorphosis in Lodz (Koter1990) where the changing occupation, shape and relationship of plots to each other is observed over time within the block, or within the morphological region centred on the street.

Plot reorganization can be expected over time to progress towards greater layout efficiency, as poor layout is corrected by trial and error. As this work examines the field of more recent changes, particular attention is given to adjustments which alter the structure of the block such as the development of rear access, the elimination of archways to the street, or anything which adjusts the original front-to-back organisation of individual plot components. This allows the origins of the process to be reached with an accurate cartographic record which then traces it right up to its present position. This historic baseline of the process is laid down in chapter 5, which then feeds the observations of chapters 8, 9, 10 and 11.

3. 03. 02 Planning records

Six case-study blocks are identified, by a process described below (3. 05. 01), and within these the planning records of development activity in the blocks are examined.

Initial scoping suggests that the most significant structural changes in small European towns began in the late twentieth century. In Ireland, this is almost concurrent with the Planning Act of 1963 from which development control has required all significant change in site form to be assessed publicly, thus providing, in a relatively unsearched databank, a detailed record of the reasoning behind change in plot management.

In the period which follows the 1963 Irish Planning Act, recorded correspondence on planning activity and development control becomes available as a detailed account of the discussion governing the change observable on maps. This is filed in local authority planning records for all towns. Cartographic analysis can therefore be linked to an analysis of the functional operations which influence form, in the selected urban blocks and plots.

It can be reasonably expected that in the examination of planning records the purpose of a particular intervention may be revealed, as will other attempted unexecuted proposals, together with frustrated ideals and intentions compromised by planning conditions. The influence on one site by the intentions of another may be traceable, as may the accumulation of aggregate change on the block, through imitation among individual site actions.
A total of 599 files are consulted. Of these 402 are found to be relevant and are subsequently examined in detail. The list of reasons for the rejection of others may be found in appendix 7.

3. 03. 03 The Local Government Reform Act and access to Planning files

Just as the middle phase of this research was underway, the Local Government Reform Act 2014 was passed. Under this act, town councils in Ireland were abolished. Their Planning and Development functions were absorbed into county councils. In this absorption the planning departments of the towns joined the planning department of the county. The establishment date for the new act was the 1st day of June 2014. From this date, planning applications to urban authorities were absorbed into the storage systems of their county authorities. Urban applications which were live, or already under consideration, were processed to conclusion by the new county administration.

Municipal Authorities were instructed by the Department of Environment to re-number urban files to align to the numbering system of their county authorities. The process of re-numbering differed from one authority to another as many of the urban authorities had used different systems which were now conforming to a counties system, to be co-ordinated nationally.

The new authorities confirmed their intention to incorporate all historic planning files into the new system, under which they would subsequently be available for reference on line. However with limited staff resources, access priority was given to live application files or those requiring, under law, immediate access for public consultation, while the incorporation of historic files on to the system was assigned secondary importance. Historic files would meanwhile be called up only when consideration of a current proposal required reference to a previous case of relevance. Meanwhile other historic files from abolished town authorities would be temporarily unavailable pending their re-numbered transfer to the archives of the county authority.

For our work this caused two difficulties. The first related to files already examined. Since our examination was at mid-point at this stage, many files had been accessed under their old reference numbers. Our six case study areas were now covered by five new authorities, each requiring different number adjustment formulae to bring them into common national alignment.
The second difficulty related to access to historic files in transitional storage, which were now temporarily unavailable. Here some planning authorities, in support of our research, offered to make available any file or group of older files which the writer might wish to view on any day. However the task of first scanning large quantities of files in order to identify and extract those of most relevance would not have been possible without enormous time wastage.

It was decided therefore to concentrate on the examination of files originally available online. For each of the local authorities, within which case studies were being searched, the new reference number adjustments were carried on to the files which had already been identified as relevant. The formulae needed to move from any original file to its re-numbered equivalent, or vice-versa, are laid out in appendix 6, for readers who wish to search files not quoted. All files which were consulted, are listed in appendix 5, by their adjusted new number. Using the formulae, the reader can therefore access any file by old or new reference number.

3.04.00 Interviews

Thirty interviews were carried out with stakeholders, each stakeholder identified from planning records as having some involvement in at least one of the case study areas.

The purpose of the interview was to extract qualitative information surrounding the domain of intention which is excluded from formal planning records and to source the interviewees own experience of the development in question. The interview ideally leads participants through a narrative of the process, recording the observations induced by their knowledge. It thus adds a qualitative insight to the quantitative measurement of process already extracted from formally couched planning records or from site scrutiny. The interviews were seen to provide empirical data which would expand the understanding of hypotheses already developing out of a particular theoretical perspective, (Gaskell 2000, p39) (Denscombe 1998, p111). The interview process and the interview findings are outlined in chapter 11.

3.05.00 Choice of Towns

Small or middle-sized towns (of generally under 40,000 inhabitants) are chosen for study, as here the adjustment of block frameworks is still clearly observable within the basic structure of the original form. Conzen (M.R.G.,1988 p254) favours smaller towns for the study of morphological process as he notes that in larger towns comprehensive modern development has obliterated former historical stratification. In the small town, the modest scale of typical development sits within, and adjusts incrementally, the original framework, rather than
wiping it out towards a tabula rasa as it may do in larger cities. In order to identify emerging patterns of re-organisation which might be comparable over a range of settlements, it is desirable to focus on towns within a common modest rank in which the changes sought are most likely to be evident.

Irish towns are chosen (01.04.00). The origin of Irish towns is thus first examined, from secondary research sources in the context and area in which they will be studied. Within these the origins of block structure and plot frameworks are then sourced, from both empirical and secondary sources.

Towns, which display characteristics of morphological interest (as defined below) at their early or historic stage, are chosen for initial desk analysis on an assumption that those towns hold the likely location of the most interesting latter-day process changes. However, this assumption is open for re-assessment at a later stage, the initial choice facilitating access to a clear understanding of the value of their baseline morphology.

The choice of towns is led by three sequential objectives. The first objective seeks a selection of towns which may be examined for the existence and development of block-core layout structures, in their original or natural development. A second objective seeks within these a selection in which modern metamorphic processes are becoming overlaid on the core layouts. A third objective is to select from these a representative sample of case studies from which the detail of such processes may be studied, and patterns identified.

For the proposed methodology, this primary sample of case-study towns is chosen from within a broader sample of similar towns, against which the range of detailed observations, extracted from the primary sample, may be tested periodically for broader understanding. The selection process prompts this framework as a method of using the field of towns which it was necessary to assemble in the first place to facilitate selection. As the primary sample is explored, some towns may prove less productive and be swapped with alternatives from the surrounding secondary sample. In Fig. 3007, the selection principles of the case study search are tabulated. The table shows the initial selection at the top filtered to the final selection at the bottom. The following description of the selection procedure starts with the initial sample of rank F moving to the final selection of rank A.
3. 05. 01 Selection procedure

Rank F

The first stage of this search employs a cartographic desk survey from which all nucleated settlements identified in the first Ordnance Survey of 1836, are listed. In practice all settlements listed in Ireland on the OS map of 1868 are taken as identifiable settlements and these form the initial list. To these are added any further settlements which appear in the OS 1911 survey. This combination is taken to identify a baseline. This initial exercise, which is deemed to be objective, yields 703 settlements.

While there are few twentieth century new-towns in Ireland, some previously uncharted villages have grown to become towns, particularly in metropolitan areas. In order to ensure the relevant incorporation of these, the most recent ranking of census towns (2011) was examined. If one adds, from this, all towns not previously identified, which have been ranked above a population of 3000 inhabitants (Appendix 8) one finds an additional 26 settlements. The final number for a baseline list therefore becomes 729. This is referred to as Rank F, as identified in table 3007.
<table>
<thead>
<tr>
<th>Rank</th>
<th>No of Towns</th>
<th>Data Source to establish inclusion in rank</th>
<th>Criteria for inclusion in rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>729</td>
<td>Cartographic examination of OS Ireland (total) map 1868 (scale 1:575,000), and relevant 2011 census sources.</td>
<td>Recorded presence of settlement on 1868 OS map of Ireland (scale 1:575,000), or subsequent development of settlement not included on that map but having a population exceeding 3000 persons in 2011</td>
</tr>
<tr>
<td>E</td>
<td>133</td>
<td>Cartographic examination using all available map sources, including for each town the 1.2500 scale maps of 1911 and digital equivalent of 2011, supplemented by historical reference as detailed in chapter 5</td>
<td>Settlement from the above list showing any evidence of applied morphological structure (as described in text) gives 133 towns</td>
</tr>
<tr>
<td>D</td>
<td>66</td>
<td>Cartographic examination as above with particular attention to the 2011 digital map, supplemented by visit to town, making record of the layout of key elements listed 8.01.01 in, the duration of the visit being generally of one day, or of one half day in the case of smaller towns, having maps of relevant scale to hand.</td>
<td>Evidence of advancement in the relationship between block structure and street (as listed in 8.01.01) Evidence of the development of co-operative layout structures in block core involving more than one plot, confirmed by site visit. At least one traditional block core, being a contested space, displaying the establishment of plot assembly for car-parking or large scale multi-plot use</td>
</tr>
<tr>
<td>C</td>
<td>46</td>
<td>Observations from D above together with detailed study of 2011 maps of 1:1000 scale</td>
<td>Reactive frontage systems (subsequently labelled in fig 8156) present in the development of route between street and block core</td>
</tr>
<tr>
<td>B</td>
<td>12</td>
<td>Observations from D above together with detailed study of 2011 maps of 1:1000 scale</td>
<td>Core preference systems present in the competition between street and block core</td>
</tr>
<tr>
<td>A</td>
<td>6</td>
<td>Further visits to specific blocks Pilot search of records</td>
<td>Blocks having overall representative range of circumstances suspected from pilot survey Ease of access to planning records</td>
</tr>
</tbody>
</table>
Rank E

What this research will seek to examine is the progression which takes place within the co-operative organisation of more than one plot in an urban system. An ideal sample town should therefore have such co-operative organisation in existence at the beginning of the period under study.

From the first sample of 729 an attempt is made to extract towns in which applied morphological structure (co-ordination of plots beyond the organisation of the individual plot) is evident. At a scale of not less than 1:2500, using the Ordnance Survey 1911 edition together with additional relevant maps, the settlements in Rank F are searched for evidence of the co-ordinated layout of plot groups beyond the organisation of the individual plot within its boundaries. Settlements are identified in which co-operative design in the layout of two or more adjacent plots exists. This search yields initially 261 settlements.

A test of the usability of the sample produced at that stage however suggests the application of two minor adjustments. While a typical terrace of houses will qualify as a systematically organised group of plots, such terraces occur in many cases, with little relevance to the more advanced plot co-ordination at the scale of the urban block, which is sought. In figure 3008, terraced houses at Ascot Terrace, Limerick show no co-operative system (other than identical form) outside the individual plot, whereas at Hill Terrace Bandon, the overall layout is organised for the benefit of all plots, having an intermediate common access between house and garden, reached by a shared central tunnel from the terrace front. Ascot Terrace may thus be described as a repeated plot structure whereas Hill Terrace is a block structure.

Fig. 3008 Ascot Terrace, Limerick, left, and Hill Terrace, Bandon (OSI 1911)
If one therefore includes only co-operative design between groups of plots, outside the individual plot but within the total morphostructure, as in Hill Terrace above, one can focus more accurately on block or multi-plot organisation.

The second adjustment relates to a pair of semi-detached houses. Such pairs are very common throughout settlements but although their plots co-operate, through such factors as the reverse handling of floor plans, their plots have little relationship to the block characteristics for which we search. Thus the common semi-detached pair of house was also excluded from this stage of the search. This screening, applied to our sample of 261, leaves us with 133 settlements which are referred to as Rank E. These are listed in appendix 8.

**Rank D**

The quest now focusses on towns which display, within at least one traditional urban block, the main elements, preferably in combination, of the block-core process which is sought. Within the sample of 133 therefore one looks for evidence of advancement in the relationship between block structure and street as listed in fig. 8156 (chapter 8). One looks for evidence of the development of particular co-operative layout structures in a block core, involving more than one plot. Here at least one traditional core should be a contested space, with evidence of an emerging demand for car parking. Following the same cartographic scrutiny described above, with particular attention to the 2011 digital map, but using all available map editions, each town of potential interest is visited if it is thought to have evidence of block core metamorphosis.

The 133 towns of this stage are used for the discursive analysis described in chapter 5, using cartographic scrutiny for all, supplemented by town visits to 66 (listed in fig. 3009), supplemented by historical information as detailed from relevant sources.

For the study of modern towns in their currently changing state the list of 66 towns is regarded as a manageable background quantity. Over 66 were visited and the most suitable 66 were chosen, where an examination of these confirmed their anticipated value (listed in 3009 and Appendix 2)

**Rank C**

For closer case study work however it was decided to rank the towns of Rank D according to their representative yield of evidence during visits, as follows. (see gazetteer; appendix 3)

Where, from the above 66, core constituents were confirmed as present, those which had
clearly advanced systems of reactive frontage in the development of route between street and block core were brought to a higher rank of value, yielding 46 towns, which are referred to as Rank C.

*Rank B*

Within these, a further rank was identified of those where core preference systems had become evident in the competition between street and block core. In particular, where frontage to core car park space had begun to develop on the back boundary of plots which faced the block perimeter, this represented a particular stage in process development. Where retail outlets had uncoupled from the town and formed outer presentations to the car park, evidence of a further stage had been reached. The number of towns which had at least one block that included a range of stages in the process evident up to and including these elements numbered 12 and became Rank B.

*Rank A*

It now appeared evident that from these one could choose a number of case studies which as a sample would yield collective evidence of the process for detailed study. At this stage the final twelve towns were visited a second time and single blocks most representative of multiple stages in the process were identified.

This ranking can be further tuned when one applies factors of comparison such as the potential range of activity in block development, the degree of typical representation by town and block, the degree to which cycles of change are complete and observable, or the nature of activity inducing change in the recent history of a town. Towns chosen for detailed analysis should have a typical process manifest in typical block form. For this reason towns which are conspicuously unique in function, such as Killarney or Westport, both of which are substantially tourist centres, would be of less interest. With these factors in hand the highest six of the twelve were chosen. These are referred to as Rank A Before the commencement of work on the towns, scoping test-searches were carried out in order to confirm the availability of access to resources. Here it was found that in two of the case studies, for reasons elsewhere explained (3.03.03), resources would have been less accessible. Enniscorthy and Tullamore were thus dropped and Roscommon and Roscrea, ranked seventh and eighth, were chosen instead. The final six towns of Rank A are as follows; Ballina, Clonmel, Longford, Roscommon, Roscrea and Sligo.
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Table 3009 shows the 66 shortlisted towns of list D.

In this, the first column indicates, where known, the specific period of origin of the town (Simms, A. 1979) (V: Viking, AN: Anglo-Norman, TS: Tudor-Stuart, E: Estate, N: New).

Columns D,C,B and A allocate towns to the corresponding ranked categories described above.

Column 6 indicates the existence of Goad maps (Goad company index).

Column 7 indicates the existence of Ordnance Survey town maps at 1:500, giving the map date (Andrews 1974, p29).

Column 8 indicates the existence of Ordnance Survey town maps at 1:1056 (Andrews 1974 p28), sometimes referred to as five-foot maps.

Column 9 indicates the existence of Ordnance Survey town plans in manuscript form (Andrews 1974 p27), generally at scales of 1:1056, but with some variations.

Column 10 indicates the corresponding map number on the town location map (fig)

Column 11 indicates the existence of specific planning designations (outlined in chapter 7).

Columns 2, 3 and 4 feed the discussion of chapter 8. Column 5, with reference to 2, 3 and 4 feeds the discussion of chapter 9.

The Location of towns is shown in diagram 3010

Towns in Northern Ireland are not included in the field of empirical research as their regulation and administration is judged to be quite different, in the period subject to most change in block structure. They are however included in the pre-empirical discussion of chapter 4 as they hold some relevance in the literature of historical discussion searched in that chapter.
3010 Location of all towns of Rank D, including towns of Rank A (darker)
Chapter 4
Establishing the context of the Irish town

4.01.00 Background

An understanding of the historical formation of Irish towns is considered essential as background to any study of recent change. It is necessary to examine in particular the characteristics of block and plot structure, as baseline for their subsequent analysis.

Evidence in this chapter is drawn from secondary literature sources, from the work of those who have researched the Irish town. The authors of such sources are for the most part historians who have looked at towns from social, geographical and political perspectives. Remarkably few of these address the spatial or organisational aspects of a town. Perhaps that remains to be added from our empirical observations as detailed in chapter 5.

However in order to lay a baseline for that addition, established history is first searched, in particular for evidence of physical settlement formation, such as block structure behind the façade, co-ordinated systems of secondary access, and sources of influence on the organisational structure of the town.

4.02.00 Viking, Norman and early Irish towns

4.02.01 Origins of the ordered layout of plots

The Greeks built urban settlements in the seventh century BC, with organised systems under which the city was laid out in orthogonal blocks, with land allocated in regular parcels or plots to individual participants (Mumford 1961 p225, Kostof 1991 p104). Although these principles of organisation are well established in settlement making however, it had traditionally been assumed that we had to wait until the twelfth century to find evidence of the beginnings of regular plot subdivisions in Irish towns, or indeed to find evidence of the existence of Irish towns at all.
Some observers would regard the beginnings of nucleated settlement in Ireland as belonging to the late seventh century in the proto-towns which collected around monasteries, generally in existence by 900 (Bradley 1995 p5). Of these there is limited reliable evidence of form. According to J.H. Andrews (1995 p25), “the people who created rectangular towns in Ireland didn’t arrive until the twelfth century”. Andrews suggested that towns were not a feature of the Celtic world. “A town with relatively straight streets and burgage plots perpendicular is a distinct entity which begins with the Anglo-Norman and is not evident in Irish towns before that” (Andrews 1986 p3).

There is now however an emerging school of thought pointing to evidence of much earlier form and order in Irish towns. From as early as 850 the Vikings had seized the chief ports and built walled towns in them before the arrival of the Normans (Curtis, 1938 p23). Emerging evidence suggests that these towns did have formal or at least regular layouts.

Recent excavation now suggests that in the Viking settlement of Dublin there is evidence, from the late tenth century, of the regular layout of urban plots (Wallace, 1992, 2016, Simms 1996 p59). Wallace suggests that this firm concept of a town resembles the Anglo-Saxon towns which the Vikings would have seen in England. He suggests that the Vikings were responsible for bringing urbanisation from England to Ireland.

Simms (1996 p59) refers to the significance of these findings thus; “At Fishamble Street, (excavated by Wallace in 1975) Wallace has produced evidence for the regular layout of the tenth century town and this he considers the single most important result of the (Viking) Dublin excavations. The excavations show the division of the site into fourteen contiguous plots, separated from each other by post and wattle fences which at one point went through three different centuries of debris indicating the continuity of property boundaries from the later tenth to the twelfth century inclusive (fig. 4000). Some of the wooden boundary fences which were preserved stood up to 300 mm in height and were up to 14 m. long.” The consistent regularity of these plots, housing over time a variety of built form, has been illustrated by Wallace (1992 vol 2 p43, 2016 p72).
Regular plot layouts may also have come to Dublin directly from Scandinavia with the Vikings. Excavations of Viking settlement at Sigtuna in Sweden (Tesch 1996 p116, Andersson 1996 p102) show a layout structure which reveals characteristic town plots, in apparently regular subdivisions. At Sigtuna, Tesch shows us four adjacent plots served by lanes or, as Tesch suggests, elongated yards, over which the property use of each adjacent plot overlaps (fig 4005). These are similar in layout to the Fishamble street plots in Dublin which Wallace describes (2016 p50), or to the laneways serving lines of back-to-back residences which are later found throughout Irish towns. Tesch notes that all of the houses in a row on any particular side of the laneway, or yard, appear to accommodate between them a single family group or household and to expand backwards from the primary streetward unit with which they have an association. This arrangement suggests an interesting concept model, not unlike the later ilhas of Portugal or blindbacks of Britain and Ireland.
Other sites in Sweden have shown similar layouts, with typical plots of approx. 7-8m wide and 30-40m long. The passageways, or lanes, are extra to these widths and are generally 1.5-2m wide. These run perpendicular to the main street, the common ground from which they are served (fig. 4010). The town plan, of pre-organised or planned structure has its spinal route linking all yard ends, taking on the characteristic fishbone structure similar in form to subsequent structures of Anglo-Norman towns but also, as Tesch suggests, similar to Viking structures evident from excavations at both York and Dublin (Tesch 1996 p122). It may be assumed that influences on form passed not in one direction but in many.
Even in its development by the Vikings, ordered layout, including that of the orthogonal grid with regular blocks and plots, would not have been new. The earlier Roman Grid is still readable today in the layout of many towns in Britain such as Exeter or Chester (see chapter 6). Although the Romans appear never to have extended their settlement to Ireland (Moss 2014 p365), the Vikings, like the Normans, are likely to have come to Ireland via Britain, and it must therefore be assumed that they brought with them all the experience and influence of that route.

It may therefore be reasonably concluded that although the ordered layout of regular blocks and plots was developed in the Anglo-Norman towns of twelfth-century Ireland, it is likely to have been present in the previous phase of Viking towns.

4.03.00 Block and Plot

4.03.01 Individual Plot and Urban System

It is essential to look to the earliest evidence of organisation within the block, which sought to facilitate the collective-layout efficiency of co-operating plots, in order to gain some understanding of the layout principles of such organisation.

Individually-managed rectangular plots, within a communal orthogonal system of street access, are basic components in the making of a grid layout. The elements of order are the street, the block and the plot. The street is the binder of plots and the block is made up of plots. The plot, as the territory of the individual participant in the town is thus the building block of the town. It is thus essential to examine the plot, its shape, form and how it is organised, before examining more broadly the town made of plots.

Kostof suggests (1991 p103) that the grid as a layout system of blocks can be identified in settlements in the Indus valley as early as 1500 BC, or 2000 BC in Babylon, but that evidence of its formal organisation belongs, independently to the Chinese and the Greeks. The Greek city of Olynthus (430 BC) (fig.4015) had a grid block structure divided into plots which backed on to a centre-block access-alleyway, or drainage lane (ibid p104 and p147).
The emergence of the merchant cities of the middle ages is observed by most historians as a period of significant structural change in the relationship between plot and street (Carter 1983 p37). Kostof (1991 p148) identifies a process in the mid-twelfth century in which the medieval trading town, with which the burgage plot developed, superseded the earlier grid and plot layouts that had developed in Greek and Roman settlements. In fact it took over from an intermediate form of north European town, typified in Zahringer settlements (figs.4079,4080), which, as agriculture-serving settlements, were made of large regular farmyards, often subdivided to accommodate houses, which were set back from the street edge line (ibid p147). The street was not therefore enclosed by the facades of plot-edge
buildings, in the form with which one is now familiar. When burgage plots became the dominant system of plot layout in the mid-twelfth century, tall narrow houses, placed tight against the street edge of the plot, consequently lining up to form a continuous edge, began to form the common townscape which survives to the present day.

4. 03. 02 Grid, block and individual plot

Perhaps an important difference in operational structure between the medieval merchant layout and the classical grid city lies in the presentation of the individual site to the public street. In Greek cities such as Miletus, Priene or Pergamon (fig 4020)(fig 4025)(fig 4026), the typical plot had a layout which was inward focused towards courtyard space, with consequently little presentation to the street. In fact the typical frontage to the street may have been a blank wall through which no contact or trade was offered with the exception of a single opening as entrance (Bell 1969 p9, Morris 1972 p27).

4020 Miletus; Plan as excavated by von Gerkan (after Morris 1972)
In the city of Olynthus the courtyard of each plot is consistently orientated to the sun, irrespective of the relationship to surrounding major or minor streets (Lynch 1981 fig 12). Here streets and back access lanes, or drainage lanes, running parallel to each other, serve the plots from opposite edges. Although one might assume that the street is the front, and the drainage lane is the back, the layout of the plot ignores these as defining factors. The internal layout of the plot remains free of the influence of any surrounding organisation in the urban system.

In a grid layout, the shape of the plot will be orthogonal, as defined by the block, but because the block may serve many directions, the relationship between plot edges and street system is not bound by consistency. Instead it must be locally prescribed by the city plan, in which the street will be given a hierarchical role. The grid, having two directions, may prescribe a bias by which the plot addresses the most important surrounding streets. The burgage plot on the other hand is also orthogonal but with an immediately apparent front, back and sides. Its layout constants are more direct than those of the grid-plot.

In any layout, individual plots are of course continually re-planned in pursuit of layout efficiencies, with common, albeit user-specific, needs, the structures of individual plots imitating each other’s layout forms, as they combine in co-ordination to make the urban system more efficient. Imitation however is likely to be more prevalent in burgage plots because these have common shape and function. Here the association between function and direction is common to all plots.

4.03.03 The burgage plot in the medieval town

In the medieval town the contact line between plot and street as urban spine appears to have been all important (Swanton 1999). It was as open as the support structure for the upper facade would allow and, in its later commercial development, the first few feet of the floor inside were intensely used for contact with the street and display of trade to the street (Rothery 1978). From front to rear the plot was arranged with items of receding importance according to the intensity by which they were used to support the street frontage. One might assume that when the trade of a particular plot was more intense, the back up space would be more intensely used and occupied by structures. When it was less intensely used, land use at the rear might be more relaxed. This allowed the plots to operate rather like pistons. The burgage plot had acquired a shape which between the frame of its party walls allowed this process to vary with great individual flexibility. Whatever its trading success however its
viability was always sufficient to generate a building on its front end, and in most cases the making of this was a requirement of its burgage contract (Proudfoot 1994). Subsequent progression of course often led the plot to develop frontage to its tail seam boundary, the tail being the second most important frontage, with profile to a lesser public way. One now refers to this as a double-loaded plot (ISUF glossary).

The Norman period in Ireland, from 1169 to 1515, corresponds closely to the high or late mediaeval period (Stout, 1997 p53). The earliest Irish towns thus post-date the transition to the typical mediaeval street form, where houses are placed on the front of plots at the plot edge, so appear to show no influences from the earlier classical forms of block layout (fig 4035). Viking and Norman towns had already adhered to the framework of spinal streets and burgage plots.

4035  Loughrea, Co. Galway OSI 1911 (detail of fig. 4085)

4. 03 04  Management of the burgage plot

Historians appear to agree (Beresford 1967, Andrews 1986, Graham 2000) that when the Normans began to build towns, these clearly had organised plot structure in their layout. This organisation appears to be structured around the burgage plot as the individual unit of participation.

In a town of burgage plots, land was divided among occupants by an organising authority. The manor or the landlord provided this authority, in which participants or plot owners availed of ordered structure, fortified protection, and infrastructural benefits.
Simms (1990 p2) describes a burgage plot as a piece of land held by burgage tenure, for which a fixed annual rent was paid and which within walled towns, as a result of subdivision, usually took the form of a narrow rectangle with its long side perpendicular to the street. The burgage plot appears to have been the main unit of organisation in the early Irish town, having the street as a binding element of infrastructure.

Burgage plots appear to have been introduced to Ireland in Anglo-Norman towns, which were planned as new settlements, or re-planned from previous, perhaps Viking, settlements. O’Flaherty (2010 p2) suggests that burgage plots were introduced to Limerick in 1190, overlaid on the earlier hiberno-norse city. O’Keeffe (2003 p3) finds evidence of burgage plots having been first laid out in Fethard, Co.Tipperary, in the thirteenth century. Kilmallock, Co. Limerick, had four streets in 1300, with twenty seven burgages on its main street (Curtis 1938, p216).

Burgages generally existed in settlements which had been granted status as a borough by the King or a feudal lord, whose inhabitants as consequence enjoyed considerable legal and economic security, under a borough charter (Proudfoot 1994). It has been established that in excess of 330 settlements in Anglo-Norman Ireland had some such form of urban constitution (Graham 2000 p131). A town of burgages, a borough by definition, generally means a self-governing administrative unit. A borough is a distinct shape. It is recognisably organised and thus different to an organic village (Beresford 1967). It has the street as spine with flanking plots at right angles.

Graham (1993 p83) suggests that, in Ireland, Anglo-Norman towns were planned as linear structures, houses having their gable ends to the street with burgages behind. Bradley (2000 p2) has found that up to recently many of the properties along High Street in Kilkenny preserved the long narrow burgage plots characteristic of mediaeval towns (fig 4040). He notes that “these regularly arranged plots were the backbone of the Anglo-Norman town plan”.
In principle, the burgage system might be described as one which defines the form of an individual plot within the confines of the plot, and not one which defines the broader town. However because it obliges the plot shape to conform to a standard, which fits with others in an orderly layout for the common good, it can therefore be defined as a system of organisation for the form of the broader town.

Whatever our knowledge of the assembly of burgage plots, we seem to know less about their early internal site organisation. There may have been many established principles of individual plot planning, on which historians have not appeared to focus.

4. 03. 05 Plot shape and dimension

The dimension of the burgage plot appears to have had clear structural origins. Conzen (1988 p265) at Ludlow has concluded ‘that a site width of two perches (10.0584m) gives adequate street frontage for a timber framed town house of two structural bays’. Where buildings were gable-fronted to the street, their facades fitted between two party walls, between which the strength of floor timbers would have defined an ideal span, which then facilitated a two-bay facade. One could conclude from looking at the burgage layout that the shape was balanced between the functional need for each frontage to be wide enough to interact or trade with the street, while being narrow enough to allow many plots to trade side by side, thus supporting the activity of the street as a trading environment. These principles have changed little in the history of the frontage.
From the modern map of Carnarvon the early burgage plots of the Norman period can be located and measured, at sixty feet (18.2m) by eight feet (2.4m) (Beresford 1967 p45, Bell 1969 p48) (fig 4050). Caernarvon was completed under Edward 1 in 1285 (Bell 1969 pp45, 51). Lilley (2001 p16) however observes a typical plot width for earlier 12th century towns in Britain such as Lymington and Honiton as 16.5ft. (5.3m). In Beaumaris, of 1298, burgage plots were laid out with dimensions of 80ft(24.3m) by 60ft (18.2m) (Beresford 1967 p50), which appears surprisingly large. Beresford (1967 p598) suggests that the common dimensions for burgage plots in Bastide towns in Gascony were 72ft (21.9m) by 24 ft (7.3m). In Miramont (1278-86) (fig 4055) these dimensions also appear (Ibid 1967 p623).
Although burgage plot dimensions throughout Europe might respond to regional circumstances, average frontage widths do tend to be similar. Bern had plots of 7m by 53m, Geneva had plots of 7m by 65m (Kostof 1991 p148). Plot density was often higher, with as consequence smaller plots, in areas of greater commercial value, increasing individual frontage size as it moved to areas more remote from the core of commercial activity (ibid 1991 p147).

Burke (1956 p138) has found that in the mid-seventeenth century development of Dutch towns, plot widths of as little as 15ft (5m) were not unusual, even for houses of the prosperous middle class. This of course may reflect the high value which the Dutch placed on land, much of it reclaimed. The depth of a house appears to have been generally three times the width of its frontage, the depth of the total plot being generally six times the frontage width. In a planned housing scheme for Amsterdam in 1671, plots were 28.9ft (8.8m) wide by 80ft (24.3m) deep. In mid-sixteenth century Amsterdam, where average plot size was 26ft (7.9m) by 180ft (54.8m) (ibid 1956 p151), the Building Ordinance of 1565 stipulated a minimum distance of 160ft (48.7m) between the back faces of buildings, achieving a garden length of 80ft (24.3) for each plot. This obviously imposed a control on plot coverage and secured daylight through an unbuilt area on the private side of the house. Burke (1956 p161) shows that wherever Dutch seventeenth century planners were planning abroad, whether in Malacca or Jakarta, they applied the long narrow plot as the constituent unit of the towns they made.

Coleman and Smith (2005, p303) suggest that, in the long length of burgage plots, the agricultural role of the individual plot was being remembered, as the rear extremity of the plot was generally occupied by crops and animals. In fact into the nineteenth century there are examples of a burgage length being provided with the specific intention of facilitating individual management for agriculture. Kostof (1991 p148) cites the linen manufacturing town of Lodz, in Poland, which developed with plots of 300m depth, to facilitate the growing of flax by individual plot owners. Dutch colonial towns of the same period in South Africa developed similar plots for agricultural use.

Graham (after Bradley: Towns of Tipperary p38) concludes that, in Ireland, burgage plots were between 25 and 30ft (7.6 and 9.1m) wide with a length width ratio of 5:1. Tarbatt (2012 p37) refers to burgage plots as commonly measuring five metres in length. One might presume that he uses the term ‘length’ to refer to width rather than to depth. His source appears to be Whitelaw (2007) but this is not clear. Andrews (2000 p148) observes that in
the towns of the seventeenth century Ulster plantation one finds plots of as little as 12 feet (3.6m) wide, which is less than two thirds the width of the average nineteenth century plot frontage. William Marshal’s 1207 charter for Kilkenny stipulated that the property of free tenants had to be 20ft. (6.1m) wide (Bradley 2000 p2), which presumably records what was perceived as a minimum burgage width. Plots were generally occupied on the front by a shop with space behind for out-offices, sheds, yards, gardens or orchards. Our own measurement of typical plot dimensions, in the Irish towns examined, shows a typical frontage width of just less than 8m. This will be addressed in detail in Chapter 8.

Current boundaries between burgage plots may vary from their original alignments for a number of reasons. Scrase (1989 p357), in research on the city of Wells, describes as common a process of plot nibbling whereby a plot may purchase a segment of the neighbour’s plot to accommodate an extension, or a load-bearing party wall, varying the boundary to run around the extension with small scale changes of direction. When buildings at the plot front became established with solid walls between, the process of variation had less flexibility, but changes in garden wall boundaries were more fluid. (Scrase 1989 p362)

4.03.06 Plot service access

Plot tail service routes, or back lanes, appear to be the second earliest co-operative system developed to serve plots, after the street as the first. They represent the allocation of space, accessible and common to more than one user, outside the ground of individual plots, towards a collectively owned system designed to serve and increase the efficiency of all plots. Although the archway from the street was also popular, it was part of, and occurred within, the individual plot.
In the city of Olynthus, an alleyway gave access to the tail boundaries of individual plots (Carter 1983 p24, Kostof 1991 p147) (fig 4060), although recent opinion suggests that what looks like an alleyway may in fact have been a common open sewer (Habraken,1998 p47 quoting Robinson). Morris (1972 p230) cites such block-spine laneways as reminiscent of Bastide planning, recognisable as service routes through being narrower than the streets. This would place them in popular use in the thirteenth century. Beresford (1967 p153) describes a type of planted town common in the twelfth and thirteenth centuries in Alsace, in Switzerland, in Bavaria and in Austria which he chooses to refer to as the market-based type, where the surrounding form of the town followed the form of the market with little other organisation of blocks. Beresford observes however that in this town-type, a back lane ran behind the burgages.

In many maps used by Beresford to illustrate towns for various reasons, back lane systems are discernible, although Beresford does not specifically refer to these. Olney, in Buckinghamshire, (Beresford 1967 p107) is one such example showing a clear service lane structure at the tail boundaries of the plot (fig 4062). Oglethorpe’s plan for Savannah in 1733 (fig 4063) laid out blocks which had a central laneway serving plot-tails from behind, running along the spine of the block. With typical street widths of 75feet (22.8m) the service lanes were twenty-two and a half feet (6.8m) wide.
From these examples it could be concluded that the back lane, providing service access to the plots from its tail, has been used throughout the history of town planning.

4062 Olney Buckinghamshire 1900 (Edina Digimap)

4063 Oglethorpe’s Plan for Savannah, 1733, (after Kostof 1991)
4. 03. 07  Plot Layout and plot organisation

The standard layout of a burgage plot evolved over time to place the shop, with residence above, on the streetward end of the plot, in secure contact with the public, having service buildings behind as required. Various ways of otherwise using the plot also developed.

In a later progression of more intense site use, buildings, sometimes residences, were stacked along one side of the long plot, accessed and given daylight from a laneway running along the remaining width of the plot. Examples of such terraced cabins are readable in the maps of 1911 in Kilkenny, Enniscorthy, Carrick-on-Suir (fig 4064) and Dungarvan. Whelan (1994 p78) suggests that they were generated by merchants, who occupied the streetward building, seeking to accommodate their workers on the same burgage plot. Such terraces could be defined as a horizontal version of tenementation (Girouard 1990 p72). In some towns, the plot appears to have been wide enough to accommodate houses on both sides, in others on one side only. Conzenian terminology (ISUF Glossary) defines this building type as a ‘blind-back’ house with its definition as follows; ‘A dwelling, usually a terraced house, that lacks rear windows or access. Its rear wall is usually along a plot boundary. It was a characteristic form of burgage repletion in Britain during the pre- and early-industrial periods and during the C19th was constructed in manufacturing cities, often intermixed with back-to-backs’.

4064  Carrick on Suir  1911 (OSI)

The Public Health Acts of 1875 in both Britain and Ireland, which required that houses have access to fresh air on two opposite sides, was responsible for ending back -to-back housing (Bell 1969 p270), introducing at least back yards behind all houses if not gardens.
4. 03. 08 The shop on the plot

When the shop first developed, it filled the most important space on the plot, being the plot’s presentation to the town, always at the front in a position of maximum contact with the street.

Cornwall (1962 p68) suggests that up to the early sixteenth century, retailers traded only in the town market, beginning at that phase to locate themselves at home in on their own premises, in what he describes as the beginning of the change from the transient conditions of the fairground to the permanence of the shopping street. Although excavations at Pompeii would suggest that ancient Roman streets had full-width shopfronts on ground floor, perhaps the medieval shops of northern Europe, like the towns, had a different path of development. Research from Edinburgh (Swanton 1999 p119) confirms that by the late medieval period the entire street frontage of a typical urban plot was given over to commerce. This transition would represent the birth of the ground floor shop, with attendant residence above or behind.

The early typical Irish shop was open fronted, having its counter at the front boundary over which goods were sold directly to the street (Rothery 1978 p18). Shutters were used to close the front at night. Rothery disagrees somewhat with Cornwall, suggesting that this form existed as typical throughout Europe since the Roman Empire. The shops of the Roman Forum of Trajan had followed such form (Ibid p18). The plot boundary therefore became the line of interface between the private vendor and the public buyer. Over this, goods manufactured on the premises were sold, from which the term workshop perhaps derives. For some goods, particularly that of butchers, this form, with counter on an open frontage, lasted into the twentieth century. More commonly however, the typical shop began in the eighteenth century to open its interior to the customer, placing the counter at right angles to the street, thus allowing a greater area of accessible display in the interior. At this stage also the glazed shopfront, with display behind its window, developed. Eighteenth century engravings of London show open fronted shops beside glazed examples (Ibid p18).
4.04.00 The Development of the Irish Town

4.04.01 Town-making phases

Looking at towns from various periods it might be suggested that the relationship between street and block is led by the layout principles guiding the purpose of the town. If one wishes to examine the town as an artefact, seeking information of relevance to the research in hand, some periods or phases of town development might be of more interest than others.

In the Viking phase which followed in the ninth and tenth centuries, settlements were established probably with structured layout (Wallace 1992, Bradley 1995, Simms 1996). Of these, excavated evidence is increasing (4.02.01), but the distribution of this is not yet sufficient to supply a relevant source of record for the context of our work.

When the Normans establish their towns in the late twelfth and thirteenth centuries the true beginnings of the artefacts which establish the context of our study appear. The Norman towns form the first of three distinct phases of town-making which are of interest to us in the evolution of the town. The second phase occurs with the Tudor/Stuart plantation towns of the sixteenth and seventeenth centuries. The third phase occurs with the estate towns of the eighteenth and nineteenth centuries (figs 4065 and 4066).

The established evidence of these phases is now briefly considered, with particular attention to the origin of influence on their form, and the existence or development of rear access frameworks.
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Medieval Towns in Ireland (Simms 1996, p54)
Fig 1.1: The origin of Irish towns from *The atlas of Ireland* (Edinburgh, 1979), compiled by A. Simms and K. Simms.

4. 04. 02 The Anglo Norman town and its origins

If the Normans were the first extensive town builders in Ireland then it does appear that Ireland benefitted from a particularly competent period in their town-building history.

Beresford (1967 p652) suggests that the Norman families who moved to Ireland after 1166 were already experienced as town planners in South Wales and the Marches. The towns which they had created there should give some clues to the origins of the thought which they may have applied to town planning in Ireland. We can assume that during their subsequent period of establishment in Ireland, the Normans continued to develop the idea of the town.

Edward 1 of England would later call together, in January 1297, the Harwich colloquium, bringing experts from twenty English towns and cities together (Carter 1983 p44, Beresford 1967 p4), drawing on the experience of those who had been managing town types, to design together the ideal town, set to influence subsequent towns in much of England and in the Bastides of France. Although the colloquium post-dated much town building in Ireland, the experience which it may have drawn from that field may be observable. Beresford (1967 p3) tells us that Edward summoned important town makers from throughout England to the colloquium, to advise him on how best to lay out the street, buildings and defences of a prototypical medieval town. Beresford suggests that never before and never afterwards did a king ever summon parliament on the specific issue of town planning.

It is suggested that Edward 1 had observed the process of town planning from his sight of Mediterranean and near-eastern cities, visited while on crusade journeys overseas. (ibid 1967 p11) Beresford however draws attention to the fact that English town planning did exist for a long time before Edward.

Most Norman towns in Ireland belong to the period of early development (1169 to 1282) (Bradley 1995 p15), preceding the Harwich colloquium. For this reason one can assume that the Irish town experience would have been feeding into, rather than drawing from, the findings or intentions of the event. Irish towns appear however to have been contemporaneous with many in England and Wales, and to have preceded most of those in Gascony. What each of these groups contains therefore should hold clues to the layout objectives under exploration at the time.

Although Beresford neither dwells upon nor mentions block hierarchy, the illustrations from his 1967 work, which one assumes to have been drawn accurately, harbour significant clues to this. In the plan of New Winchelsea, (1292) (illustrated in Beresford 1967 p20)(fig 4070) one can see that in the plot layout for quarter 8, western frontage is given prominence,
northern and southern frontages have the next importance, while eastern frontage has least prominence. In this is a clear indication of front and back, suggesting the premier street is to the west with the service street to the east. (though not referred to by Beresford)

4070 New Winchelsea; Block Layout (Beresford 1967, p20)

In the Welsh town of Llandovery, in Carmarthenshire, founded sometime between 1276 and 1316 (ibid 1967 p542), back lanes can be identified serving burgage plots which front onto more important streets, while in the town of Bala in Merionethshire, founded in 1310, (ibid 1967 p557) back lanes appear to run parallel to its straight main street.

From the same work, the illustrations of Norman towns in Gascony also quietly show evidence of such hierarchical definitions within block structure. In the layout of Beaumont Du Perigord (ibid 1967 p32)( after Testut)(fig 4075), of the four streets running north-south, the central two are double fronted and wider than the perimeter two which are single fronted. In Monclar, a hilltop town, the single main street is flanked by two side streets both of which serve the plots of the main street from behind. It was founded in 1304 (ibid 1967 p590).
In Montpazier, commenced as a Bastide by Edward 1 in 1284 (Morris 1972 p86), the layout module shows a standard house plot with, on the main streets, a frontage of 24ft and a depth of 72ft (fig 4076). The typical block depth takes two of these, back to back, with a separating lane of 6ft between, (appearing as a thin white line on fig.4076), giving rear access to the tail seam of plots on both sides. Conzen (1988 p267) refers to Montpazier as having no part of the intramural area left unserved by bilateral back lanes.
Andrews (2000 p147) observes that the Norman towns of Gascony had many parallel streets in their grids in contrast to the earlier common single-spine towns of Anglo-Norman Ireland. Here they had to give priority to some streets over others in order to facilitate organisational hierarchy. Andrews refers to this when he suggests that this might have been necessary in order to limit the number of town gates, or vulnerable openings in the town perimeter, each of which would require to be manned.

The Zahringer towns, approximately fifteen in number, located in what is now southern Germany and Switzerland (fig 4079), were built between 1122 and 1218 (Morris 1972 p95) and have some characteristics which are similar to the Anglo-Norman towns, with which they were contemporaneous (fig 4080). One of these is the long single spinal street, running from end to end as a single market space. Another is the regular subdivided plots which line this street on both sides. In Zahringer towns these originally had their long side, of one hundred feet, to the street but at an early stage they became subdivided into plots which had short sides to the street as in the more typical medieval layout, with a sixty foot depth (Morris 1972 p95). In the early plan of Bern (1190-91) an obvious mid-block service lane serves these plots from their tail seam.

4079  Zahringer towns; Location, (after Morris 1972)

4080  Zahringer Towns; Generic plan, (after Morris 1972)
Loughrea (1236) is a typical example of the Anglo-Norman town in Ireland (fig 4085). It survives in a particularly recognisable state. It was walled and has the characteristic spine and burgage plots of an Anglo-Norman town. On the north side of the main street, plots ran to the town wall. On the south side some lanes exist, perpendicular to the street.

Graham concludes that wherever the layout of an Irish medieval town can be identified by reconstruction, it was predominantly linear (fig 4090). Out of forty-five towns still extant and founded by the Normans, thirty-one were actually linear, with the main street forming the spinal market place. (Bradley 1985) Some, such as Clonmel, Carrick-on-Suir or Drogheda were more elaborate, being irregular chequers (Graham 2000 p133).
Camblin, focussing on the more elaborate chequer plans, which as he notes in Ireland are more likely to have straight streets and square block layouts, attributes these factors to the fact that the Normans were more likely to fortify their towns artificially with walls rather than by natural location, thus (as we presume without any natural fixation lines) leading to more regularity in the layout (Camblin 1951p55). His findings would appear to suggest that the Normans were responsible for the rectangular urban block in Ireland.

Curtis (1938 p210) suggests that the Normans in Ireland founded many more towns than those which survived. Bradley (1985) believed that only one in four towns survived as an economic enterprise. Many never developed to their planned form. Athenry (1240) is a town around which the wall is intact, but enclosing much more ground than was ever occupied by the town as built. Whitehand (1969 p120) observes that extensions to medieval towns are made difficult by the presence of walls, communal rights to surrounding fields and pastures,
and the restrictive nature of defensive sites. The tendency therefore for town walls such as those at Athenry to enclose initially more land than is needed is understandable.

4.04.03 Towns of the sixteenth and seventeenth centuries

According to Bradley, “the general pattern of development of medieval Irish towns is one of expansion in the thirteenth century, contraction in the fourteenth, consolidation in the fifteenth and expansion again in the sixteenth” (Bradley 1995 p39) (see fig 4066).

That second period of expansion and development is often described as the middle phase, and is frequently referred to as the plantation phase. Almost all Irish towns however have some component of plantation in their origin. Hurley and Whelan (2014 p393) suggest that many of the towns or villages laid out in this phase obliterated previous settlements including many earlier Anglo-Norman forms.

Rocque’s (1756) map of Dublin (fig 4095), could be assumed to show an urban fabric organically assembled over the previous two hundred years. It begins to indicate a clear
relationship between back lane and street in the way in which blocks are served, whether they are of residence, with simple repetitive function, or commercial, with more flexible requirements. In Rocque one can see, particularly in streets which develop naturally, such as James street in Dublin, which developed around a route out of the city, the way in which lanes and plots in their ideal form develop relationships out of practiced function, something which is subsequently observed and carried into strictly planned layouts of the same relationships in the new towns of the eighteenth and nineteenth centuries.

Significant to the natural sequence here is the fact that the route first becomes established, developing from, and subsequently attracting, the flow of activity, to which the plots then respond with a trading frontage, the plot service structure then developing in response to the needs of the frontage.

Beresford suggests (1967 p51) that town planning was not practiced for 300 years from the time of Edward 1st at the end of the thirteenth century until the plantation of Ulster in 1609. What Beresford perhaps implies is that no innovative thinking occurred in the planning of towns during this period, not that towns did not continue to be built or indeed planned, according to ideas already established.

The first towns of the plantation period were square or rectangular (Andrews 2000 p146), as at Maryborough or Roscommon. Andrews observes that some later examples were irregular polygons, reacting to the tactical importance of the angle bastion or perhaps to the contours of the land (fig 4100). Regular and geometrically ordered streets which were, by medieval standards, straight and wide, were a universal feature of Plantation towns (Andrews 2000 p147, Mulligan 2013 p15).
It appears that the most important scheme of plantation towns was that of the Ulster plantation, commenced in 1609 (Jones Hughes 1961 p10, Bradley 1995 p42). Here twenty three towns formed a well- designed settlement strategy. Although a lot of information exists on the strategic location of these towns, not much detail exists on the planning of their individual forms. Andrews (2000 p148) observes that they were built in a uniform manner with their dimensions prescribed by government grant. Captain Nicholas Pynnar is credited as being responsible for many of them (Camblin 1951 p31). Thomas Raven is recorded (ibid 1951 p31) as being in charge of the construction, and/or design of Londonderry and Coleraine. His name is associated also with a number of smaller settlements (Brooke S. Blades 1986 pp259, 262, 265). In comparison with towns throughout Ireland, those in Ulster seem always to have a central square, a tradition not as common elsewhere. Planned towns
in the north of Ireland also appear more often to have square block subdivisions, while those in the south frequently have curved streets. The town of Donegal (5.02.04) was part of the Plantation of Ulster, as were Lifford, Ballyshannon, Killybegs and Cavan. (Butlin 1976 p88)

Rocque’s map of Newry, prepared in 1760 (fig 4105), shows many rectangular urban blocks with gardens indicated in their cores. Camblin (1951p79) observes that by 1757, the central blocks of Belfast no longer contained gardens at their core but had had their commercial use intensified by the construction of additional access lanes from the high street through their cores to the streets at their rear, of which many traders were availing.

4105  Plan of Newry 1760 by John Roque, Camblin 48/49

A sixteenth century map of Newry (ibid 1951 p14), shows houses in different segments having different densities and characteristics of association with the street. Houses in the middle class, the Bayse town, appear to be separated from each other, with space around each. A map of Londonderry in 1622 (Bell 1969 p67) shows the prominence of gardens, in space which may be expected to have been committed to that land use for some considerable time if not forever.

Richard Boyle became Earl of Cork in 1620 (Butlin 1976 p82). He restored the towns of Lismore Tallow and Youghal. He planned Bandon, Clonakilty, Enniskean and Castletown
Kinneigh. He was most proud of Bandon (fig 4110), in which, according to Butlin, each house had a garden. Butlin refers to Bandon as having a gridiron layout (1976 p82), although this is quite distorted in the detail of execution, as visible in Scales map of 1775 and still traceable in the town today.

4110 Bandon by Richard Boyle, circa 1615 (after Butlin 1976)

Back lanes or service lanes, which might have been occasionally present in earlier Norman towns, or at least implied in their street hierarchy, are not conspicuous, and indeed are particularly scarce, in plantation towns. Where they do exist they tend to be perpendicular to the street, serving just single plots.

4. 04. 04 Towns of the eighteenth and nineteenth centuries

Some historians tend to divide this third period into two and sometimes three sub-phases (Hurley and Whelan 2014 p394) suggesting that the economic drive behind each phase was slightly different. Perhaps however from the morphological point of view the forms and layout structure which resulted, to be discussed here, were not significantly different.
Although it has been suggested (Butlin 1976 p97) that there has been little addition of new towns to the Irish urban system since 1700, Proudfoot (1993 p235) submits that over 750 towns and villages in Ireland display some form of cohesive planning or partial reconstruction between 1700 and 1900. Whelan (1997 p187) observes that the period from 1720 to 1740 in particular saw the creation of a spate of regularly planned villages.

Graham and Proudfoot (1994 p1) refer to the tendency to refer to new towns and town improvements which were created between 1700 and 1840 as estate towns or estate works. This they conclude is so only because much of the information available to researchers which leads to the study of these developments comes from the study of estate papers. There were also however many other participants in this phase of town-making.

In addition to being planned, some towns allocated lands with leases that enforced the compulsory implementation of building form (05.05.04). Around 1760, (Hood 1995 p124) the main street of Strokestown, Co.Roscommon, was laid out by the Mahons. Plots were leased with strict regulation, creating, through stipulated building frontage, the alignment of the street. “Such tenurial strategies were common in the making of Irish towns of the period” (Hood 1995p125). Frequently when one goes to examine towns which show a very promising plan layout one often finds that the street plan is surrounded by unremarkable architecture of uncoordinated forms. In this, Strokestown is a particularly clear example (fig 4115). Camblin (1951p78) observes that in Castlewellan and Warrenpoint the plans also read as most interesting but the buildings which define the spaces are uninspiring.

![Strokestown Co. Roscommon 2011 (OSI)](image-url)
Towns which had a strong patron, whether proud landlord or industrial entrepreneur, show a conspicuous smartness in comparison with those which had not. Dunmanway (fig. 4117) had as its patron Sir Richard Cox, Lord Chancellor of Ireland. In addition to making the town, he built a mansion for himself (Lewis p585). Bence Jones (p116) refers to the Manor as having been built around 1819. O’Dalaigh (2012 p5) suggests that it was because Ennis never had a proprietor, that it tended to develop piecemeal, extending streets and opening lanes as occasion required. Eighteenth century and more particularly nineteenth century towns, which do have proprietors, tend to be rich in layout design, and this tends to include the design of service systems, which grew in complexity as the period progressed.
and its Palladian influences in Britain and Ireland, and also with renaissance principles in town development elsewhere, originating from sources throughout Europe. There were many routes for the transfer of ideas.

One could assume that where the landlord engaged a particular architect for the design of the landlord’s ‘seat’, this architect might also have been asked to design other buildings on the estate. If the adjacent town or village of the estate was being improved at the same time it would be reasonable to conclude that the same architect might be involved. Actual evidence of this however is scarce. The architects involved in such town improvements are seldom mentioned, if of course they existed at all. Detail and form may simply have been copied by builders, within the repetitive plot briefs of merchants and improvers. One exception is William Tinsley, architect, who is recorded as having redesigned a section of the town of Cahir, Co. Tipperary (fig 4120). He was commissioned by the Earl of Glengall as landlord to remodel the town “by erecting sundry ranges of street houses”, probably including Glengall Terrace in Church Street, between 1830 and 1846 (Irish Architectural Archive, Dictionary of Irish Architects 1720-1940). His work included a redesign of the central market square, including a realignment of all of the approach streets leading into it.

The design is a deliberate work of townscape arrangement, in the picturesque manner. The plan is not a conspicuously formal layout with streets entering on axis, but instead includes many of the devices which would normally be associated with the townscape of contrived

4120  Cahir Co. Tipperary  1911 (OSI)
surprise. Its characteristics are recognisable as those which Sitte (1889) was to refer to much later as the ‘turbine’ plan, in his analysis of Piazza del Duomo in Ravenna (fig 4125).

4125 Piazza del Duomo, Ravenna (after Sitte, C. 1889)

Local landmark buildings such as the market house are placed asymmetrically at positions which close the view as streets enter the square. The Earl’s own house was placed strategically on the south side of the square (Bence Jones 1978 p53).

How did Tinsley, at the date of this intervention come in contact with this school of thought? He was locally born, later emigrating in 1851 to the United States where he had a not unremarkable career (Irish Architectural Archive), but at this stage does not appear to have travelled. Yet somewhere an absorption of significant ideas was taking place.

For our interest, Tinsley’s work around the square shows a highly organised rear service system in the layout of individual plots. Behind the facades, the block bounded by the square and Castle Street has an elaborate plot tail access system. On the opposite side of the square, the east side, the southern half of the block is served by a tail-seam lane, while the northern half has archways from the street. Both of these blocks would have been part of the Tinsley design.

It might be significant that a cottage and church were under construction in Cahir (Bence Jones 1978 p53) designed by John Nash at the same time as Tinsley was designing the square. John Nash was an admirer of the picturesque and a very competent urban planner. In addition to his well-documented urban interventions he also designed in their totality a number of small towns in Britain, such as Blaise Hamlet and Aberaeron (Bell, 1969 P232). Whether or not Nash and Tinsley were in contact however, or whether indeed Nash ever visited Cahir, is not here proven.

The renaissance principles of organisation and layout employed in many town improvements of the eighteenth and nineteenth centuries were relatively straightforward. In the context of urban space design these principles had a relatively limited range of architectural features and street layouts, from Dutch and French ideas in landscape, sometimes filtered through Britain. One might fairly conclude that they could be applied competently by amateurs

A common method of being certain of success may have been to replicate a successful layout from elsewhere, particularly if the location of the original was fashionably foreign. Graham (1994) quotes Samuel Lewis (1837) as concluding that Moy, Co Tyrone in Northern Ireland (fig 4130) was laid out after the plan of Marengo in Lombardy (fig 4135), (although an inspection of the original work of Lewis by the writer fails to identify this reference). The Earl of Charlemont was proprietor of this town. Rowan (1979 p433), possibly drawing from the same reference, notes that Moy ‘is said to have been drawn up’ by the Earl, modelled on Marango, in about 1763.
When James Hamilton (Lord Limerick) began to redevelop the town of Dundalk in 1725, (O’Sullivan 2006), he had travelled widely on the continent and is recorded as having been assisted by Thomas Wright of Durham, described as a leading architect and landscape planner of his day. Casey and Rowan (1993 p262) describing this association of approx. 1740, refer to Wright however as an amateur architect. Draperstown in Northern Ireland was rebuilt between 1818 and 1845 by the Draper Company to the designs of their surveyors Jesse Gibson and W.J.Booth (Curl 1979)  (Loeber 2014 p400).

The ease of applying renaissance principles even without the pen of an amateur architect may have been broadened to assume that the classical logic of such principles would help a good town to organise itself. Graham and Proudfoot (1994 p46) note that “in 1777, James Fox, the absentee proprietor of Lanesborough, Co.Longford, instructed his agent to survey the vacant plots in the town and lay them out in the most advantageous method for letting” (Lane–Fox Papers)

The omission of context-sensitive design might of course lead a town to miss the potential response to its natural surroundings. In Birr (fig 4140) it is noticeable that the view to the rear garden is seldom exploited in the town’s Georgian houses. Here, very fine houses on the north side of Oxmantown Mall have their rooms arranged to avail of view to the street as the primary external space, in true townhouse fashion, but the view to the opposite side, which to this day is still equally attractive, is systematically blocked by a screen of outbuildings which terminate the inner yard space and separate it from the garden beyond. Given that in Ireland the Georgian town house was a later stage of the Georgian country house, this was perhaps an unusual rejection of opportunity in the overall design, suggesting perhaps the absence of any on-site judgement by a designing mind. Birr, though much a planned town (by the Parsons family of Birr Castle) (Lewis p455), and also a garrison town, relies by coincidence on archway access from the street to reach its properties, with very little development of rear access systems.
In towns with a military function, the layout will generally show the influence on space by which the street and market places might also double as parade grounds for the military. This would account for the regularity of the central public spaces of towns like Templemore (fig 4145) or Fermoy. The military of course had access to a trained corps of engineers, architects and designers and through the towns they made, it might be assumed that many ideas found their way into the townscape of other towns. Monasterevin, Co.Kildare appears to have been planned by a Colonel Tarrant, a canal engineer who planned the system of canals which join in the town (Horner 1995 p102) (see chapter 5).
Whitehand (1969 p109) suggests that in English towns there is a relatively clear distinction between mediaeval towns and those of the later renaissance period, the latter being more symmetrically planned. He notes that in renaissance planning, the plots, though with straighter division lines, are shallower. Of our three classifications of period, the first would fall within the medieval classification, the latter two within renaissance. The evolution of these two distinct town classifications into modern use shows an interesting distinction (see chap 12; 12.06.01).

4150  Westport  1911 (OSI)

The existence of shallower plots is noticeable in Westport, Co Mayo (fig 4150), laid out in 1780 as an estate town. It is also noticeable in Portlaw (fig 4155), Co Waterford, laid out forty-five years later as an industrial town. These two towns have a noticeably common design philosophy in which the streets and public spaces form the primary concept, leading the design. In the sense of public placemaking this is laudable, but behind the façade the plots are formed from the space left over (12.3.02,13.02.00).
4.06.00 Reflection

Notwithstanding the recent discovery of the presence of order in Viking or earlier towns, it can still be concluded that the Norman towns represent the first settlements in Ireland where an extensive order between plot and street defined the form of the town.

Urban layout in classical cities did have back lane structures but it is from the mediaeval spinal layout of north European towns that the earliest Irish towns take their form, where the relationship between the burgage plot and the town mirrored the social or political relationship between the contributing inhabitant and the protecting borough.

The dimensions of the typical Irish burgage plot correspond closely to those of typical European size. Although conclusive evidence is scarce, one can assume that the internal organisation of plots had some consistencies throughout history. The back lane, providing service access to the plot through its tail boundary, is found in early town plans.

In the history of Irish towns, three broadly-defined phases can be recognised. Towns built by the Normans were the first set of surviving urban settlements and are highly structured. They represent a period in which the Norman town had become a very competent settlement form, following its development in Wales, albeit preceding its development in Gascony. In
most Irish examples a single spine dominated, although the Normans were later to develop parallel streets with a hierarchy. Evidence suggests that many Norman towns did clearly have back lanes.

The second phase of town building in Ireland is that associated with the plantation period of the sixteenth and seventeenth centuries. The towns of this phase, still defended by walls, were regular in plan with formal spaces such as central squares and were generally geometrically laid out. Back lane structures however are not obvious in towns of this period. Lanes perpendicular to the street sometimes served single plots or plot groups.

The third phase of towns, of the eighteenth and nineteenth centuries, is that associated with the estate landholding of the landed gentry. Here with the corresponding development of Palladian and later classical revivals in architecture, the layouts are classical or renaissance in manner with formal urban spaces. In the latter part of this phase, block systems and rear access structures appear to develop significantly.

The sources of influence on the design of towns of this phase would be of great interest but records are scarce. On the other hand, as many observers suggest, renaissance planning was easily laid out by amateurs following and repeating a number of simple rules from the pattern books.

In addition to simple formal layouts, there are many examples of contrived townscape in the picturesque manner, though the source of influence of such ideas is sometimes obscure. It was often fashionable to copy urban space design from towns on the route of the grand tour, as it was in other fields of architecture.

Evidence appears to suggest that in towns of the eighteenth and nineteenth centuries the street and the public urban space were given priority in a layout that would impress, often assigning to the plot the space left over, whatever its shape, whereas in the earlier medieval or Norman towns, the plot and street were laid out in an inter-related system with consideration for the ideal spatial needs of each.
5.01.00 Introduction; Primary Research

With this chapter the primary research begins, the objective of which is to identify patterns, characteristics and relationships that may not have been collectively observed before, but which are likely to relate strongly to the baseline of the evidence to be subsequently gathered and the theory subsequently pursued. Here begins the primary research in which observations are empirical.

For this analysis the Ordnance Survey maps prior to 1911 are introduced, together with the 1911 series. The 1911 series clearly contains the most comprehensive surveys closest to a stage when the making of towns in their traditional state was complete, but before the urban metamorphosis of the twentieth century had commenced. The 1911 series also coincides in date with a comprehensive census, linking to a broad field of statistical data which may facilitate comparative research later or by others. The maps of this series also give total coverage of all settlements at a scale of 1: 2500. They may therefore be used as consistent benchmark, for comparison with various earlier maps where these are available. In association with the maps, early topographical descriptions are also examined, including those of Lewis (1836), recording observations which have corresponding relevance to the earlier, though less detailed, map series of 1836. This chapter also uses sources which refer to the proprietors of towns and to their local seats and estates, where such reference may be of value in the subsequent association of the town with the architecture of its making or with influence on its form.

Although the maps of the first edition of the Ordnance Survey from 1836 do not show plot subdivisions, they do show built form, by which the plot subdivisions can be traced backwards from the second edition which begins to appear in 1850. Lafrenz (1988 p274) has
established the reliability of this methodology in his metrological analysis of early-modern towns in Germany. In the 1836 Irish maps there is sufficient accuracy in the representation of building form to locate plot subdivisions from the 1850 maps. Seldom is there significant change in the form of the block over that particular twenty-year period.

5.01.01 Chapter order

In this chapter the back lane is first observed in its most simple instances (5.02), in particular the informal back lane or access arrangement between plots. The conspicuous appearance of back lanes in small settlements is examined, citing seven examples, while the more obvious provision of plot tail access to larger commercial plots is examined, citing four cases. An assumed progression from façade archway access to plot-tail access systems is challenged in the evidence of a number of examples. The noticeable retrofitting of rear access as improvement works in the latter part of the nineteenth century then prompts a search for incentives, inducements or regulation which might have encouraged such practice (5.03).

With an obvious distinction between access routes perpendicular to the street and plot-tail routes parallel to the street these are then sourced individually, looking first at the perpendicular type (5.04). The parallel type, in its more advanced development, is closely associated with the distinction between inner and outer plots and accordingly this distinction is also searched (5.05).

Some of the block-planning set pieces are then listed observing fourteen small but significant instances of forethought in total block design (5.06).

The relevance of examples from the larger cities is briefly considered (5.07) before the chapter concludes (5.08) with a summary of principal findings.

What this exercise seeks in particular is evidence of plot organisation behind the street façade, particularly of systems of co-operative access or the pooling of facilities to serve plot groups with semi-private access systems.

5.02.00 The Back Lane in Simple Form

5.02.01 Rear access by agreement

The development of rear access is possibly the most common generator of co-operative systems among plots. Such systems range from simple informal agreements to structured
layouts that bear evidence of informed design, securing alternative vehicular access to the rear or service-end of the plot.

Sometimes systems of rear access appear to exist without any formality but as an arrangement between plots. One might view these as a transition between access from the front, and organised access from a plot-tail laneway. However, research fails to show any obvious patterns or chronological progressions between the informal situation and the development of the back lane.

In the course of modern site assembly for development under recent incentives (7.01.04) experience in practice has shown (R03, R14) that urban plot deeds frequently include easements giving plot owners established rights-of-way through other plots for certain access services. In many cases such easements have seldom if ever been used. Whether used or not however, their provision did acknowledge an awareness of need.

In the 1911 maps of Nenagh (fig 5004), Castle Street has few frontal archway entrances and no direct rear access laneways of significance. Yet close examination reveals a casual and complex set of routes from behind, to most plots, through obvious shared arrangements or assumed rights of way. Barrack Street has similar complex provisions that reward scrutiny.
In Athlone, a town of Anglo Norman origin (fig 5005), on the north side of Church Street, an archway leads to Preaching Lane, between six plots fronting to Church Street. Behind these a laneway runs parallel to Church Street, informally linking all of the plots to Preaching Lane, and stopping just short of plots on both ends which are linked to other lanes (fig.5006). This is a typical example of a system which appears haphazard but is carefully laid to reach all whom it serves from behind.

At Aclare, Co.Sligo, (fig 5007) an elaborate back lane system, readable on maps of 1911, though not in place on those of 1836, gives rear access, in addition to street frontage, to
every plot in the village. A conspicuous lane runs to the northern rear of the Main Street, with another more modest lane covering plots to its south. Together they combine to provide a system of service access around the village. Aclare as a small settlement of twenty-two plots appears therefore to be served by a somewhat extravagant provision of access infrastructure.
A similar system at Courtown, Co.Wexford, (fig 5008) appears to provide rear access to all plots that form the village core. Unlike the layout at Aclare, the arrangement at Courtown is in place on 1836 maps, at the foundation of the village.

5009  Sallins 2011 (OSI)

Sallins, Co. Kildare, (fig 5009) enjoys a similar attention to the provision of rear access to every property. Though not to the same level of extravagance as Aclare, Sallins is meticulously designed as a settlement. Its origins appear to have developed around the fact that it was a staging point on the Grand Canal (Lewis 1837). It may therefore have had engineering expertise in its layout with attention to formal design. At Rathmullen, Co. Donegal, (fig 5010) a neatly laid rear access system is visible behind the main street in the vicinity of the coastguard station and its associated buildings. The link with a coastguard station would suggest that, as in Sallins, its ordered design draws expertise from its association with public works.
Moville, Co. Donegal (fig 5011) was purchased in 1768 by Samuel Montgomery, a Derry merchant, who began to develop the town as a seaside resort from 1780 onwards (Rowan 1979, p431). Though it is a substantial village, its design is by a single hand. Its main street was complete in 1860. Almost every street has rear access provided in an organised framework or “ensemble” (Haslam 2018), back streets being consistently narrower than the primary streets, to denote their service role. One is actually named Back Street. In the centre, a grid of back streets crosses an enclosed block surrounded by primary streets. Where they are unaffected by fixation lines, the back streets are laid out to define site depths of 25m.
Carlingford (fig 5012), a planned Anglo-Norman town, of the thirteenth century (Lewis p253), has a main street with back streets. The eastern back street has its edge to the sea. The western back street has a set of plots between it and the line of the town wall. Clifden, Co. Galway (fig 5014), designed in 1812 by John Darcy (Lewis p339), has a service access route, very different to Carlingford, running through the core of its main commercial block, which is a closed structure, serving from behind streets on all sides.

These seven examples are typical of rear access systems recognisable on the maps of 1911 and identifiable in various stages of emergence, through the earlier maps of the nineteenth century.
5.02.03 Plot tail access to commercial segments; four cases

In situations where towns were partially designed or designed in segments, limited access systems which relate to generally commercial sectors can be found. From the maps of 1911, the following four towns are important examples of this phenomenon.

5020 Bagnalstown 2011 (OSI)

Bagnalstown (fig 5020) is referred to by Lewis (1837 p99) as increasing in significance in 1836. It was founded towards the end of the 18th century by Walter ‘Bagenal’ of nearby Dunleckney Manor who ‘intended it to be of considerable architectural pretensions and to bear the name Versailles’ (Harbison 1988 p252). In 1836 the coach road ran through Bagnalstown but its later re-routing left the town high and dry and it ceased to develop further. The present Dunleckney Manor is a mid-nineteenth century building the design of which Bence-Jones (1978 p116) attributes to Daniel Robertson of Kilkenny. Robertson may have had a hand in the design of the town at this stage.

Some, perhaps half, of the central plots are provided with systems of rear access. In particular the important commercial areas have access. Plots on the market square have a tailored system achievable by short block lengths, very similar to a system recognisable in the central streets of Ballyjamesduff, Co. Cavan (fig 5021), and Ballymahon, Co Longford (fig 5022), while those on the south side of the main street have a straight back lane. Blocks north of Regent Street have a variety of systems, all bearing evidence of design. On Kilcarr Street, plots on the south have lane access also, as the beginning of a larger housing scheme embracing New Street, which appears never to have been completed.
Ennistymon (fig 5023), described by Lewis as “having a picturesque appearance, though irregularly built” (Lewis 1937 p607) is a town of curiously unconnected segments. Significant is the fact that its commercial groupings appear in 1911 to be serviced by rear access, as in Bagnalstown, while this appears to be less critical in the case of residential morphotopes. The town is placed on a very hilly site which obviously accounts for the irregularity of its layout.

5024 Mitchelstown 2011 (OSI)

Mitchelstown (fig 5024) has, on lower Cork Street, a distinct access lane serving plots on its east side, while on the west an organised frequency of archways and shared lanes is evident on the maps of 1911. This combination is also seen on the east side of upper Cork Street. The blocks north and south of new market square have spinal access routes. Edward Street is an obvious rear access route to Kings Square. A distinct rear access lane is readable on the south of Baldwin Street.
Lehinch (fig 5025) has a clearly designed set of access lanes to the west side of the main street, named numerically. By a system of lanes all properties on the east side of the street are accessible to the rear with the exception of the post office. In 1911, Mall Street, on the present waterfront, had no buildings facing the sea. The main street, as core of the original organised settlement, is parallel to, but a block away from, the sea. Lewis (1837 p242, refers to Lahinch)
5. 02. 04 Façade archway, rear access laneway; relationship and progression

When the public street space and the private plot were the two basic components of the earliest towns, the plot was entered from the street. Presumably in later periods the need for such access became more acute as burgage repletion created further uses in the plot tails behind the street frontage. One might tend to assume that this primary route of access to the individual plot, through an archway, was the first or typical, other forms of organised shared access to multiple plots developing in time. This progression however cannot be assumed.

5026 Loughrea 2011 (OSI)

In, Loughrea (fig 5026), a town of Norman origin (1236), early maps show the burgage plots, which flank the central main street or spine, carried individually back to where the town wall formed their physical tail seam. There is therefore no access to each plot other than through the façade, the only boundary of contact with the common access ground of the street. If the frontage is occupied by a building, an opening must therefore be maintained in its ground floor as access to the plot behind. Hence an archway exists in almost every façade in the town. In a typical façade of 7m width however the archway must occupy at least 2m in order to accommodate a horse-drawn vehicle. Because this represents 2m of valuable trading frontage, it must have been inevitable over time that the experience of town traders and users led to thoughts on how to create alternative access to the plots behind, in order to reclaim the full 7m frontage width for trading profile.
5027 Gorey 2011 (OSI)

In Gorey (fig 5027), a town constructed in the seventeenth century (4.04.01), and probably largely rebuilt following destruction at the end of the eighteenth century, five hundred years later than Loughrea, there are no archways whatsoever in the facades of its spinal main street. Instead, as an alternative, shared laneways, parallel to the street provide access to the plots from behind.

It might be assumed that the rebuilding of a later town draws experience from the operation of an earlier town. Although cartographic evidence does not exist in the case of Gorey, one might assume that the earlier town had archways, with now an obvious progression in organisational efficiency from individual archway entrances to rear access laneways. The rear access lane serving a number of plots pools access space and increases the trading frontage of each plot.

The assumption however that this progression may have happened through experience and time is challenged by evidence from towns in general. While the transition might represent a progression in layout efficiency, the progress from either form to the other is, from the samples available, not broadly evident as a chronological development. Rear access systems are present in towns of every period examined (4.03.06), visible from the twelfth century in the earliest examples. Whelan in fact describes a back street running parallel to the main street as characteristic of Norman towns (Whelan 1995 p196). Whitehand (1969 p111) has found that in over half of single-street medieval towns in Scotland, the street is
bounded partly or entirely by back lanes. Notwithstanding this evidence however the logic of the progression whether it occurred or not might still be argued.

An explanation might lie in the relationship with scale economies. Most towns examined show a mixture of rear access systems, accumulated from individual building interventions rather than from particular periods. A development of three plots together perhaps offers the greater scale economy of a common back access route than does the development of a single plot, whatever the period. Close examination throughout the sample towns confirms that the clustering of access systems relates directly to the grouping of buildings, or morphotopes of single architectural intervention, recognisable on plot frontages.

In Clonmel (fig 5062) a group of three houses in Bellevue Place (top left) justifies an access lane as does a group of five around the corner in Anglesea Street. Examples in Monaghan, Enniscorthy and Athlone, though all common to the nineteenth century, show access systems availing of opportunity in an otherwise mixed urban fabric.
5063 Drogheda 2011 (OSI)

Drogheda (fig 5063) is an Anglo-Norman town, with possible Viking remnants (Casey 1993 p232). West Street, its main spine, has archway access to plots on both sides. Its extension to the east, St Laurence Street, has no archways on its south side. Access here is by Bachelors lane to the rear of plots. North Quay, to the south of it has similarly no archways. Access to the rear of its plots is through Bessexwell Lane. All of this area formed the core of the original town, inside its walls, north of the river crossing.

5064 Roscommon 2011 (OSI)

Roscommon (fig 5064), which is late Norman or post Norman (Simms 1979), uses a combination of archway and side lane, sometimes serving adjacent plots, sometimes serving
one only. The plot depth is long on one side of the main street, and shorter on the other, but no preference for access type is shown in this difference.

5067  Charleville 2011 (OSI)

Charleville, Co. Cork (fig 5067), quite a late town of 1661, (Lewis p324) also displays a variety of management systems in its block organisation. The central block of its main street, facing Broad Street, which one must presume to be the earliest, has predominantly archway access, with, like Roscommon, long lanes periodically running front to back, some of these lined with later artisan houses, as one also finds in a developed Norman town. The block immediately north of this however has a tail seam access lane, with no access through the street frontage. Although throughout Charleville one finds a variety of distinct access systems, the layout of the town is attributed to a single hand, that of Lord Roger Brohill (RPS 1999 P5). Bence Jones (1978 p82) attributes the development of Charleville to the first Earl of Orrery, to whom he also attributes the design of the Earl’s own house nearby. The Earl and Brohill appear to be the same person. The house had a short history, built in 1661 and destroyed by fire in 1690.
5068  Tipperary 2011 (OSI)

Tipperary (fig 5068), like Bray, has a complex linkage of routes to the rear which allows groups of plots to feed off single archway access from the street within a very short distance. In blocks of the main street, the arch access has been relieved by alternative systems. Where buildings on flanking streets join with the main street the preservation of access to main street plots is secured in a variety of ways. Tipperary is an Anglo-Norman town (4.04.01). The proprietors of the town were jointly Stafford O’Brien and John Smith-Barry.

5069  Navan 2011 (OSI)

In Navan (fig 5069), the plots of Trimgate Street are served almost exclusively by a dense frequency of archways for almost the entire street length. There is no other conspicuous rear access system. In some cases this access is then commonly collected at the rear by a number of sites in obvious co-operation. Navan is an Anglo-Norman town.
Dundalk (fig 5070) has Clanbrassil Street as its main axis, with intense archway access on both sides, having, within many plots, laneways perpendicular to the street, serving artisan housing rows within the plot. It is possibly the expansion of these that has produced larger streets running to the east, on which side initially more land was available for the expansion of the town. Lewis (1837 p571) refers to lord Roden as owning nearly all the land in the town. He lived in Dundalk house with its estate to the west of the town, but in 1837 he planned according to Lewis to move elsewhere. The estate subsequently became part of the town centre.
Generally, where a spatial set-piece such as a town square is laid out, rear access lanes will be found as part of the overall intervention. In Dungarvan however (fig 5075), none of the buildings which have frontage to the designed central square have either archway or lane access to the rear of their plots. Along the adjoining streets however, archways are common to many plots and there is an interesting series of perpendicular laneways in the area of Parnell Street and Church Street. Much of the town was developed by the Duke of Devonshire (Lewis 1837 p577).
Donegal’s current form derives from its Tudor/Stuart plantation origins, when Sir Basil Brooke laid out the current town including the central Square, in the shape of a triangle, referred to as the Diamond (fig 5076). Despite this being a single concept, plots are entered through the building facades by a variety of archways and small laneways perpendicular to the street. These plots vary in depth according to the fixation lines of hill and estuary defining the tail seams. The total town in maps of 1911 was still quite confined by field boundaries. Back lanes appear to have been less common in plantation towns (4.04.03).

From the above twelve examples one can conclude that a back-lane, whether parallel or perpendicular in type, can occur in any town of any period and that, although some clusters are present, there is not sufficient evidence to allocate any type conclusively to any period. The later addition of rear access within towns of earlier period is however a factor of interest which prompts some attention.

5. 03. 00 Rear Access as Improvement Work

5. 03. 01 Late insertion of rear access into pre-existing urban fabric

The succession of information from Ordnance Survey maps gives a useful fix on the fact that many rear access systems were inserted in the nineteenth century. The scarcity of such systems in the early nineteenth century maps together with their conspicuous distribution in the later maps suggests a distinct pattern of development.

5078 Boyle 1836 (OSI)
Boyle, Co. Roscommon, in the 1836 map (fig 5078) has many back lanes visible as a distinct structure. Those behind Bridge Street, Main Street, the Crescent and Elphin Street occur in parts of the town which, according to Lewis, are relatively recent. The area of Green Street, north of Bridge Street, which Lewis identifies as older, does not have back lanes. However, in the later twentieth century map (fig 5079), an additional back lane appears inserted, with some obvious difficulty, behind Eaton Street, to the north-west. The access value of the lane is clear in the effort of its insertion. The Lorton family, resident at Rockingham in 1836, were proprietors of the town at that period.
Kilkee, like Boyle, has, between Albert Road and Chapel Lane, a rear access route which appears to have been inserted later than the plots which it serves (fig 5085). The shape of the lane is conspicuously intrusive within the discipline of the surrounding plot structure.

5086 Tobercurry 1836 (OSI)

5087 Tobercurry 1911 (OSI)
In the period between the maps of 1836 (fig 5086) and 1911 (fig 5087), Tobercurry, Co.Sligo, acquires a conspicuous rear access lane along the backs of its plots on the north side of Teeling Street. Listowel, Co.Kerry, also shows regular back lanes on many town centre streets in 1911 (fig 5089), none of which had appeared in the 1836 map (fig 5088).

5088 Listowel 1836 (OSI)

5089 Listowel 1911 (OSI)
Collooney has rear access routes behind much of the main street, but it is significant here that the plots which already existed in the 1836 map (fig 5090) do not have rear access, nor do they subsequently acquire rear access. In the map of 1911 however (fig 5091), new plots which have subsequently developed do have rear access. The developing fashion is thus readable.
Cahersiveen (figs 5100 and 5101) is a relatively new town. Lewis (1837 p239 ‘Cahirciveen’) refers to it as ‘having been a mere five houses ten years ago’ but now having rapidly increased in size. An older road on its southern perimeter appears to be used as access to some of its rear plots but distinct laneways are created to the rear of all of its newer pieces, as in Collooney. The block to the north of new market street, on its east end, is a particularly clear example.
Between the maps of 1836 (fig 5102) and 1911 (fig 5103) the village of Roscarbery, Co.Cork acquires a distinct series of back lanes delicately inserted into the existing fabric. They appear to the rear of plots on all sides of the central square. By their uniform narrower width, relative to that of the streets, these routes have a clear service function. The residual plot depth achieved varies slightly because of the surrounding grain but on three of the four sides a residual plot depth of 48m appears to be the objective.
Whitehand (1969 p114) has examined the distribution of building coverage in Scottish towns, concluding that higher coverage shows some tendency to be associated with the presence of back lanes. He has observed that this generally results from the repletion of burgages by a variety of subsidiary buildings in the nineteenth century. He compares the town maps of John Wood from the 1820s with Ordnance Survey maps of 1900 to establish this. Whitehand significantly suggests (Whitehand p115) that high building coverage is associated with certain types of medieval plan characteristics.

This begins perhaps to suggest a circular theory that a town’s intensity of trading activity may justify the existence of rear access, such access subsequently facilitating greater site coverage, which further increases the intensity. Increased prosperity in Irish towns in the latter half of the nineteenth century may have induced such a process. The benefits brought about by the effort of these access works is obvious, whether included in new fabric or retrofitted to existing fabric. The conspicuous popularity of such works suggests that there may have been some form of inducement on a scale broader than local.

5.03.02 Incentives towards rear access

The improvement of rear access for urban plots in the mid-nineteenth century occurs over a wide area. Was there national legislation or were there incentives, financial or otherwise, encouraging or providing for town improvement works in 18th and 19th centuries which included service frameworks, or was it merely peer competition among towns, traders or proprietors? Accounts of towns in the earlier part of the century (Thompson 1976, Cullen 1968, O’Grada 2015) suggest that congestion was one of the principal problem areas for residents and traders. If public inducements to improvement were present, there is a strong likelihood that they were associated with roads, focussed on the enhancement of circulation and access. Let us turn therefore to consider this field.

The Grand Jury Act of 1710 assigned authority and responsibility for roads to the Grand Juries (Broderick 2002 p22). This authority was strengthened by the Highways Consolidation Act 1727 (ibid 2002 p22). O’Keefe (1996 p19) however identifies the Public Roads Act 1796 as the first comprehensive act which, repealing many previous acts and included many new traffic laws, appears to have become the principal act governing and facilitating the construction of roads for much of the nineteenth century.
An act was passed in 1805 under which the post office was given the right to set standards for the design of roads to be used by mail coaches and this appears to have had a significant effect on the quality of roads which followed (Killen 1997 p210). An act of 1822 facilitated initiatives by parliament providing financial loans to support road building. Congestion appears to have peaked in the 1830s (Cullen 1968), and in 1832 the construction of roads was transferred to the Board of Works at which point road building accelerated, (Whelan and Mullin Burnham 2014 p143).

Relief works to provide employment in the years surrounding the famine of 1847 also concentrated on the construction and improvement of roads (Harzallah 2009 p91), in particular on those which improved access to harbours. O’Keefe (2004 p1) identifies the Act of 1898 as the statute which subsequently created the County Councils as the modern authorities responsible for roads, transferring that responsibility from the Grand Juries.

It is likely that many of the above statutes could have been responsible individually or together for the larger scale perimeter routes that began to free towns of congestion. This would include many by-passes and circular roads which have appeared by the maps of 1911, which we shall later discuss such as for example at Scarriff, Co.Clare, Kiltimagh, Co.Mayo, Roscarbery, Co.Cork, and Borrisokane, Co Tipperary. It is not clear however to what extent this development was carried into town centres. Neither the work of O’Keefe nor Broderick address specifically the street or urban routes in towns.

Central Government did begin to take a greater interest in towns in the latter part of the nineteenth century (O’Dalaigh 2012 p6). The Towns Improvement Clauses Act was passed in 1847, followed by The Town Improvement (Ireland) Act of 1854. The latter provided for the incorporation of new streets within an urban structure (Clause XXXVII). Perhaps more significant however are the provisions in the 1854 act regulating works to sewers and their connection. Here may lie the real incentives. Since drainage and sanitary facilities tended to be located at the back-end of properties (conspicuous in the earlier maps) the likely area to install new sewers to collect the drainage of plot groups would have been along the back of plots. Could it be that laneways were created at this time either as hardstanding areas over such works or as secure common ground to protect them?
The social impact of such cleansing works would have been considerable, relative to the modest work involved, for politically attentive proprietors who had control of the land. Milltown Malbay has a particularly interesting access road, serving plots to the west of the main street, defined by interesting seams of permanence. This does not appear in the map of 1836 (fig 5105) but is firmly established in the map of 1911 (fig 5106). In 1837 Lewis refers to the town as having been improved lately, with credit to the exertions of a Mr. Moroney.
A random examination of some town directories (Pigot, 1824, Slater 1846, 1894)) suggests that many landlord proprietors were members of local Grand Juries, giving them access to the investment strategies of such bodies. Similarly many county councillors were also successful town merchants, and their names can be found associated with philanthropy in the creation of late nineteenth-century terraces of town houses, named after themselves. If the eighteenth century town by many accounts (Cullen 1968, O'Grada 2015) suffered from congestion and grime, the route to solve these conditions did appear to have had some incentives, particular in the acts of 1847 and 1854 which appear to have been followed by a conspicuous phase of development. One could assume that in this the improvement of drainage infrastructure was prominent.

5. 03. 03 Mail coach roads and circular roads

In some towns the improvements necessary for the development of mail coach routes, facilitated by the statute of 1805, may have been the likely generator of new access structures or alternative routes around earlier hilly streets. The first Ordnance Survey maps of 1836 often show straight new routes not yet built upon, behind, or parallel to the established earlier streets. Adelaide Street in Sligo and Farnham Street in Cavan (fig 5124) are such examples. Many routes, as in Kilkee, Tuam, or Sligo (fig 5126) actually bear the name Mail Coach Road.
5124  Cavan 1836 (OSI)

5125  Cavan 1952 (Campbell Morgan, NLI)

5126  Sligo 1836 (OSI) colours indicate parish (green) and ward (red) boundaries
One can assume that it would always have been important, in any period, for a town to be located and accessible on a major transport route. Before the arrival of the railways the routes of the mail coach, and the Bianconi coach, had a particular commercial importance to small towns (Killen 1997). If the town’s own congestion obstructed that route, the mail coach might select a different route. In 1836 the coach road ran through Bagnalstown but when its later re-routing left the town unconnected, evidence suggests that as a result, further development ceased (Harbison 1988). At Ennis, the new off-street market place was laid out at Cloughanegour in 1755 (O'Dalaigh 2012 p6) in order to reduce congestion through the town centre.

5127 Swinford 1911 (OSI)

Swinford, Co Mayo (figs 5127, 5128) was a market town with its main central street recorded as Market Street. From the early maps it is clear that all access roads through the town met in this central street. It may be assumed therefore that on market day congestion would have been intense. This may have been the generating reason for a set of alternative routes around the town. The 1836 map shows a rear service route developing to the north of Chapel Street and west of Market Street. By 1911 the town centre is virtually circled by a complete set of full-width roadways. This intensity of perimeter streets for such a small town would appear to be quite unnecessary and an inspection of subsequent buildings on Brookville Avenue, east of Market street, and Pound lane, south of Chapel streets reveals that such streets failed to attract primary frontage uses that would have established them as streets in their own right. As by-pass routes however their function was clear. They did also
happen to be sufficiently close to the backs of plots on the primary streets to provide rear access and service functions to these.

A particular category of by-pass route around congested towns was the Circular Road, actually referred to as such. Few towns ever achieved a road circling the perimeter, but the by-pass segment obviously conveyed coach traffic efficiently around the settlement from main route to opposite main route.

Kilkee (fig 5129) displays a newly-inserted Circular Road in the late nineteenth century which was not in existence in 1836. On the other hand Tuam (fig 5130) has its Circular Road before 1836, doubling, as in Swinford, as a partial access route to the rear of premises on Dublin Road. It would appear however that in Tuam the early insertion of this road left it, by the end of the century, too close to the centre to have any major impact on ease of congestion around the perimeter. Circular roads appear to have been common projects for famine relief works in 1847 (Harzallah 2009).
5129 Kilkee 1911 (OSI)

5130 Tuam 1911 (OSI)
5.04.00 *Service Lanes Perpendicular to the Street*

5.04.01 *Service lanes perpendicular to the street in Anglo-Norman towns*

After the access laneway running parallel to the street at the plot tail, the second most common rear access system is the service lane perpendicular to the street which runs between plots or groups of plots (fig 5131 C).

(A) Dundalk

(B) Listowel

(C) Killarney

5131 Urban segments showing (a) no common access, (b) parallel lane access, and (c) perpendicular lane access (OSI, 1911 series)
Maps show that the perpendicular lane is common in towns of Anglo-Norman and Viking origin. It can join the street through a façade archway or between two frontage buildings. The latter condition is more common. In many cases the perpendicular lane links to, or acts in combination with, a plot tail access lane, with which it may be contemporaneous in origin. However, among all of the towns which have been examined, this combination never occurs in towns of known Viking origin. Access laneways which run from street to back between groups of plots often belong to a distinctly designed urban layout structure (5.06.01).

The perpendicular access lane appears in many middle-sized towns including Carrick-on-Suir, Clonmel, Wexford, Thurles, and Kilkenny. All of these are towns of Norman origin, or of Norman overlay on Viking origin. In Carrick-on-Suir (fig 5135), on the south side of the main street, perpendicular lanes penetrate the block at regular intervals and are linked at the back of the plots by a service lane which, by its somewhat organic line and its title Strand lane, was possibly defined by the former riverbank. Carrick-on-Suir was developed by the Butlers, Earls of Ormond who had their castle here, erected in 1309 (Harbison).

5135 Carrick-on-Suir 1911 (OSI)
Wexford, which is of Anglo-Norman influence, with earlier Viking origins, uses frequent lanes from front to back of block to give access to the sides of plots (fig 5136). The practice of back lane access to the rear of plots is, as a consequence, undeveloped. Only in the block between the main street and the waterfront are plot tails accessed, where a more recent nineteenth century waterfront route follows the rear plot boundaries.

Kilkenny also has lanes running from street to plot tail, here linked by a plot-tail lane. Kilkenny is Anglo-Norman. Lewis records its foundation date as 1195. At Cashel, Co. Tipperary, the lanes are also traceable, and here they can be found both inside and outside the line of the wall which enclosed the Anglo-Norman town. Hatter’s lane on the north end is, for example, outside the original town gate at Canopy Street (fig 5137). The lanes outside may therefore be later, continuing a concept found to be successful earlier.
5. 04. 02  Six plots and a laneway

If one looks carefully at the burgage plot subdivisions of Carrick-on-Suir (fig 5135) in its original state, and examines the occurrence of perpendicular lanes, one will find, on the south side of the main street, lanes, entered by archways, frequently occurring at intervals of six burgage plots apart. Carrick-on-Suir is Anglo-Norman in origin and the main street is a burgage-flanked street linking the castle to the town.

A similar lane structure is also discernible in Mallow, Co.Cork (fig 5138). Here on the north side of the main street there is a clear relationship between lane frequency and burgage plot grouping, a laneway occurring after every seventh plot, observable in a sample of nine plot groupings. Mallow is also a town of Norman origin developed by the Jephson family (Lewis p338). This plot structure occurs mainly at the east end of its main street, close to the castle on the dominant spine of the original town. Its burgage plots are therefore likely to be original.
In search of such patterns a suggested indicator exercise can be applied to the 1911 maps. In this, the objective would be to search for early patterns, while overriding alterations which may have occurred in the more recent history of archway sequence (fig. 5139). One should first identify combinations of, for example, five, or any number of, plots between one archway (A) and its neighbour (B). One then looks to the opposite side of the archway (B) to find if another arch might occur five plot widths away. If so, arches in between may have been later insertions, or an original lane later occupied by a narrow plot, may become obvious. On the other hand, in order to override historic plot assembly, the total width of an average cluster of identical plots between arches can be measured and the resultant dimension (Xm) can be searched for elsewhere.

From this, regularity of perpendicular access lanes can be evident, by whatever sequence, popularly around the 5 to 7 plot frequency. One might assume therefore that the layout was worked out to an ideal which varied where the regularity was important, whatever the rhythm. One must ensure here of course that one is dealing with lanes which serve plots from outside their boundaries, and are therefore shared, as distinct from archways on to single plots, with internal routes through the plot.
Thurles, Co. Tipperary (fig 5140), another Anglo-Norman town, shows interesting patterns in the rhythm of arches and lanes along both sides of its main square, as does Roscrea (fig 5145) along its Main street, remodelled in the 13th century. (White, 1932, p151) In Kilkenny there are also at least two groups of six plots between lane entrances to its main street. Similar plot groupings, generally close to seven in number, appear in Athy, south of William Street, Duke street and Leinster street, as they do in Cashel, between six and seven in number, on the Main street. If one compares current maps with the earlier map series of 1880 one does as expected pick up some of these relationships which have since been obliterated. One can only assume that in the 800-year history of these plot structures, further research into deed papers might be expected to pick up more such relationships.
Although these examples may be nothing more than coincidence they prompt searches elsewhere for similar practice or influence into, or out of, town-making in Ireland. The town of Fources, a Bastide town in Gascony (figs 5146 and 5147) was founded in 1279-86 (Beresford 1967 p589) and therefore could be close to the same school of layout as Anglo-Norman towns in Ireland at this period. Beresford describes the town thus; “around the market place stand the forty one houses which make up Fources. Each house is set at a slight angle to its neighbour so that the market place is a 41-sided polygon. The forty-one houses are in seven groups and between each group there is a gap, giving access to a back lane which makes the complete circuit of the town.” Interestingly, the connecting laneways between the market place and the back lane occur at seven-plot intervals.
The Normans may have developed the idea of ideal sequences. Carrick-on-Suir and Fources may have been linked by similar practice. Who influenced who, or in which direction the influence passed if it passed at all, is probably insignificant. Such pattern similarities however do prompt reflection on the Harwick colloquium of Edward 1 in 1297 (4.04.02) and
how ideas might have passed into and out of that colloquium. The colloquium post-dates the foundation of Fources. It also post-dates the supposed foundation of almost all of the Anglo-Norman towns in Ireland which have been mentioned. It may however pre-date periods of subsequent adjustment or rebuilding where plot groups sought new and ideal combinations, from experience which in the late thirteenth century was already developing from practice by trial and error. In any effort to apply order or design of towns it would perhaps follow that the frequency of such lanes would have been addressed.

5. 04. 03 Service lanes perpendicular to the street in later towns

A number of later towns, not of Norman origin, use the perpendicular lane extensively for access, indicating its merit, though in equal popularity with the parallel tail-seam lane.

5149 Killarney 1911 (OSI)

In Killarney (fig 5149) the Main Street is flanked on both sides by perpendicular lanes many of which in 1911 were lined with small houses. The Browne family, earls of Kenmare, who lived in Kenmare house, Killarney, were proprietors of Killarney. Along the main spine of Ennis (fig 5150) incorporating Parnell Street and Abbey Street, front-to-back lanes are common. These sometimes become streets and are sometimes linked by lanes parallel to the spine.
Gort, Co.Galway, (fig 5151)) has a conspicuously structured system of perpendicular and parallel routes of access behind plots in the square, extending also into Bridge Street. There are no arches on the square except those which lead to this system. These are seen to be already in existence in 1836 but are still extending in the early twentieth century, in combination with the developing order of the settlement. The town was owned and managed by Viscount Gort who lived at Loughcooter Castle nearby. He appears to have employed Mr Nash (Lewis p667) to design Loughcooter. This may indeed have been John Nash. There is evidence of considered organisation in the design of the town.
5. 05. 00 Access Systems to Inner and Outer Plot

5. 05. 01 Inner and outer plot

The use pattern of typical burgage plots appears to show distinct parts of a plot developing for distinct purposes. Within the common plot, two clearly separate spaces are common; one close to the back of the frontage building, surrounded by service structures, the other farther from the building, not surrounded by structures. It can be assumed that the space close to the frontage building was intensely used as outdoor service to the building for such functions as washing and storage and can be presumed to have had a hard surface. Most surviving examples do. This space is commonly referred to in European plots as the yard (possibly because in nineteenth century terraced housing its paved area appears to have defined a square yard). This might be referred to as the inner plot. The other space was larger, on the outer side of the inner plot, not surrounded by buildings, but fenced or walled from other plots. From its representation on nineteenth century maps it appears to have been frequently planted, either as garden or vegetable space, or indeed as space for animals. It could therefore be classified as tilled or farmed. This might be referred to as the outer plot (fig. 5152).

![Inner and outer plot distinction, typical examples (OSI 1911 series)](image)

Scales (1775) map of Bandon, Co.Cork, (fig 5153) was made at a time when the later town on the north bank of the river was less developed than the town centre on the south bank. The map serves to illustrate the same building type, of house over shop, at different stages of development. From it one can see in particular the different relationships between the inner plot, as defined or surrounded by out-offices, and the outer plot, planted as garden. The inner plot is far less developed as a single space in plots on the north bank while quite defined in plots on the south. Correspondingly the outer plot is more advanced in its defined...
layout on the south. This observation would appear to confirm that the built portion of a plot progresses outwards as the plot develops, as suggested by Conzen (1988).

The distinction between inner plot and outer plot is commonly observable in the organisation of most plots. The detail of this distinction is generated individually by each plot. If any characteristics of the organisation do repeat themselves from plot to plot, this repetition would perhaps be led by two factors. The first factor would relate to the natural subdivision on any typical site between yard activities and field activities, the former on hard-standing, the latter on tilled or planted ground. The second would relate to neighbour experience, where the plot repeats a layout observed to be efficient on an adjacent plot. This is substantiated by observing the slight differences from plot to plot in, for example, the main street of Loughrea (fig 5155), where similar layouts on inner and outer plots are repeated from plot to plot but with slight variations in form and composition generated by individual organisation, though possibly never planned as a measured repetition among plots by a single mind.
A description of North Shields in 1564-65 (Beresford 1967 p474) notes that the town houses were crowded, with “not yet anye rowme on the backside to make onye gardines or orchards”. One can presumably read from this the suggestion that it would have been otherwise normal for gardens and orchards to be made on the back of typical houses, or the suggestion that the average house of the period aspired to have such features.

5.05.02 Access lanes parallel to the street between inner and outer plots

Of particular interest are the access layouts which develop in segregated systems to serve the inner and outer plots independently. In the case of an access lane which serves the plot through an entrance on its tail boundary, it can be assumed that most of the goods transferred through this entrance would have had their origin or destination in or close to the inner plot, or to the back of the main frontage building. Their passage or route through the plot would therefore require ground to be left unobstructed to this point. (Fig 5158 stage B) Correspondingly, outside the plot, in a tail seam access lane, the route from the street to the rear access point of the plot would be unduly lengthened by the length of the plot. It was perhaps the experience of this unnecessary diversion that led to the idea of a semi-private access lane that would cross a number of plots at a position closer to the built end, serving the inner and outer portion of each plot in opposite directions (fig 5158 stage C).
Origin of the intermediate access lane

This new system, though severing the contact between the plot and its full depth, created an access corridor which then gave access to other things on that corridor, as well as giving inward and outward access to the focus of activity on each plot, within the storage zone, therefore serving the overall property more efficiently. The downside was that it would limit expansion in the long term of the inner plot outwards, and also compromised privacy in the connection between inner and outer plot. Presumably under Irish law (Land and Conveyancing Law Reform Act 2009, section 35 (1)), it would also establish a non-private right of way across intermediate plots. Where these flexibilities were less important however, this form of access laneway appears to become very popular from the early nineteenth century onwards, particularly on residential plot groups.
Kiltamagh, Co.Mayo (fig 5160), has a clearly organised service route running parallel to its main street on the north side. The route flanks the transition between inner plot and outer plot and obviously gives clear access to yard space behind each property. At twelve-plot intervals this is linked to the main street by a short lane. A structured layout is thus readable. Further less-regularly laid lanes exist on the south side of the street. Lewis in 1837 makes no apparent mention of Kiltamagh, nor does Harbison. Ballybofey (Lewis p104) has a similar distinct back lane, serving plots on the north side of the main street, running between inner and outer plots, as does Aughrim, Co Wicklow on the south side of its main street.

In some cases the formal regularity of the concept may not be as conspicuous, though the access may be maintained. In Timoleague, Co.Cork, (fig 5161) on the east side of the main street a rear access laneway on the interface between inner plot and outer plot appears to have been achieved by owner co-operation rather than by external design as all of the boundary frontages are slightly different. The burgage plots which appear outside it do not appear on earlier maps, but this might be due to cartographic economy rather than to their absence, as from their relationship with the street structures, they would seem to have been there quite early. Millstreet, Co.Cork, on the north side of its main street appears similarly to have a variety of shared access arrangements among plots particularly in the inner plot zones, which have led to the removal of boundaries.

The above four examples represent those at the more informal end of the intermediate lane concept. Situations where a developer or proprietor had more control of the total plan beforehand are quite popular, particularly in the late nineteenth century, and these lead to
more formal regular morphotopes. Where such co-ordination is possible an efficient layout co-ordinating many properties generally results, and many such layouts become more precise as the century progresses. Hill terrace, Bandon, (fig 5162) a terrace of six houses with an intermediate access lane between yards and gardens, accessed by a single façade tunnel, would represent the higher order of co-ordination where the patron had full design control of the terrace on a clear site, before its occupation.

5162 Hill Terrace Bandon 1911 (OSI)

5.05.03 Public street as boundary between inner plot and outer plot

A further variation is traceable where the access lane, which served the yard on its inner side and the garden on its outer side, takes both itself and the garden to the front of the plot and onward to the opposite side of the street or road. This occurs, not frequently, but generally in residential plot groups only (fig 5163 stage D). The concept could be likened to the eighteenth century city square, where the garden components of all plots were pooled to give a large central park as garden accessible by all (5163 stage E). In this the yard was also taken to the front at basement level to form a cordon-sanitaire between house and public street. It could be suggested of course that these examples, drawn from maps of 1911, anticipate the subsequent garden-city layouts which bring a display garden to the front, with a family garden to the rear (fig 5163 stage F).
Evolution of access lanes and access to gardens

Ballycotton Co. Cork (fig 5164), Courtmacsherry (Hamilton’s Row) Co. Cork, Rosses Point Co. Sligo (fig 5165), and Aughrim Co Wicklow (Jubilee Cottages)(fig 5166), have examples of plot-leaping situations where the service route, which elsewhere runs between the inner and outer plots, goes to the front side of the plot to double with the street, leaving the yard behind the building, bringing the out plot or garden across the road to the front (fig 5163 stage D). The evolution of this in coastal situations is particularly popular. In three of the above examples, the sea forms the tail boundary of the outer plot, opposite the roadside boundary.
5164  Ballycotton 1911 (OSI)

5165  Rosses Point 1911 (OSI)

5166  Aughrim 1911 (OSI)
Monasterevin has on Moore Street a similar frontal plot arrangement (fig 5170). Moore Street does not have a consistent back access route but does have a complex variety of frontal access lanes and archways. Lewis (p386) refers to it as having been recently laid out by Rev Henry Moore. The principal proprietor of the town was Mr Cassidy, owner of the brewery which was in 1837, extensive (Lewis P386). The extension of the canal through the north core of the block east of Moore Street, with gardens taken out, suggests a very adventurous intended cross section to the block, at the hand of a canal engineer, the remainder of which was never built. If one takes a rear section and moves it southwards opposite a front section, a representation of the full concept can be imagined.(fig.5171) Skibbereen, Co. Cork (fig 5175) has a back lane system north of the main street, with a relationship to Levis quay,(fig.5176) similar in the creativity of its organisation to that of Monasterevin.
At Bantry (fig 5178), in a further variation of his layout structure, the block south of the main street has, at its east end, an interesting tail lane which serves a row of houses parallel to the street, on the outer edge of the lane, while having a flexible inner boundary through which the backs of sites on the main street are served.
At Ballycastle, Co.Mayo,(fig 5179) on the north side of the main street, a dual system of access appears to apply where the inner plots are accessed through shared archways from the street, while the outer plots are reached by a very neat road placed at the plot tail perimeter purely for that purpose. This somewhat extravagant roadway serves a questionable need. Lewis in 1837 (p128) refers to recent improvements here.
5.05.04 Charlestown and Ballaghadereen

A cluster of towns in county Mayo show an unusually advanced system of plot co-ordination and access layout which tempts closer scrutiny.

Charlestown, Co. Mayo, which is non-existent at the time of the 1836 map, appears as a conspicuously structured town on the maps of 1870. Charles Strickland, agent for the absentee landlord Charles Henry Dillon, is recorded (Morris 1988) as having designed the town in 1845. He created incentives inviting participants to build there, including rent free plots for those who were first to build. Within two years, sixty buildings had been completed. Strickland’s plan specified that each plot should be fronted by a building of two storeys.

5180 Charlestown 1911 (OSI)

The framework of rear access routes to plots is perhaps the most structured feature in the layout of the town (fig 5180). Here access lanes run between the inner and outer plots serving a generous inner plot together with an adjacent outer plot. For the commercial blocks in the centre, where the converging backs of corner sites would prevent access to outer plots, groups of the latter are provided in the core of the block. This is most evident in the block between Main Street and Ballagh Street.

Ballaghadereen, sixteen kilometres to the east, has an identical rear access system for many of its plots and blocks (fig 5181). Much of Ballaghadereen, however, appears to have
been already in place in maps of 1836, with the exception of a subsequent main street extension or realignment to the west. Lewis, writing of it at this stage (1836 p102), refers to “recent improvements in the town, which is rapidly rising into importance” having had the new mail coach road from Ballina to Longford routed through it.

![Map of Ballaghadereen 1911 (OSI)](image)

5181  Ballaghadereen  1911 (OSI)

Lewis (ibid p102) refers to a recently erected courthouse. This courthouse forms a terminal building as part of the realignment of the main street. This street has a clearly planned rear access system on both sides, with inner and outer plots. So too does the block to the south of the market square, though dimensionally different, with different building types.

The most elaborate block however is that to the east between Pound Street and Barrack Street, where the outer plots are organised symmetrically about the diagonal axis of a square block, having a formal system of additional lanes to reach some of them, particularly those provided at a distance for the closely spaced buildings at the corner of the block. The outer extremity of this lane system appears to focus on a communal well.
Ballaghadereen may have been the testing ground for a plan which had greater freedom in Charlestown. The 1836 map shows the eastern block in Ballaghadereen complete, with the beginnings of a co-ordinating structure behind and south of the main square. At that stage nothing existed in Charlestown. The later map (1911) shows the main street and other blocks in Ballaghadereen adjusted to the new framework, with Charlestown meanwhile complete.

The layouts for both towns suggest they were by a single hand. In Ballaghadereen, the dimension from the street face to the nearside of the inner lane in the newly installed sections is consistently 30m. In Charlestown 30m is the corresponding dimension throughout, with 38m and 40m close to the central space. When one looks for influence from towns under construction elsewhere one finds that Harrogate in Yorkshire was expanding (Bell,1969 p129) with almost identical block layout principles (fig 5182), and here typical corresponding dimensions show 27m on Cambridge Rd, 27m on Prospect Place and 38m on Parliament St.. The work in Co. Mayo was obviously in touch with similar ideas.
Charles Strickland is referred to as a town planner, and agent for Henry Dillon in the context of having designed Charlestown (Morris 1988). The origin of his experience, or of the ideas which he applied, prompt searching. Although there is little concrete evidence, there are some clues. In 1872, Charles resided at Loughglinn house (ibid 1998), close to Ballaghaderreen, the principal house of the Dillon family whose estate the Stricklands managed in their absence. His residence here would indicate his role as the principal agent for the estate. Charles was preceded as agent at Loughlynn by a Mr. White who is listed (Henry 2003) as having laid out the demesne in 1801. This layout is on a grand scale showing, in the map of 1835, extensive landscape organisation with great avenues newly laid to the north of the house, and new straight roads, many unfinished, linking the demesne to other places. In 1828 Jerrard Strickland of Loughglinn, whom one might assume to be the father of Charles, was listed (Moore; Landed Estates Database) as a member of the Grand Jury Panel for County Roscommon where his position would have given him access to the latest thinking on the design of roads. Charles was therefore perhaps not far from creative activity.

Locally progressive planning was obviously motivated by such factors as peer display, individual enterprise and the sense of adventure in the application of novel ideas in an unrestrictive environment. Political power and the respect gained by imaginative management of local place were perhaps closely connected. Proprietors frequently applied novel ideas of physical improvement to their town or physical place, and then watched with pride as it developed naturally. Although many projects lay unfinished, the dream as laid out was often sufficient to impress or influence others.

5.05.05 Influence on other towns

In Ballyhaunis, Co.Mayo (fig 5183), which is just twenty-four kilometres south of Charlestown, the service laneway which flanks the outer edge of the inner plots to the west of the main street does so with such a consistency that it must have been designed in tandem with them. Access laneways appear to the rear of the other central blocks also, in a similar plot relationship. The properties served by this arrangement appear to have differing requirements, by the nature of their layouts, but all are deliberately, though flexibly, facilitated by the overall layout structure.
Ballyhaunis was located at a junction of the boundaries of four estates, (Waldron 2008p10) and for this reason did not have the benefit of a single landlord proprietor. In response it appears that groups of local merchants were responsible as entrepreneurs for the construction of groups of buildings in the town (ibid p10), all of which have rear access laneways similar in layout to those at Charlestown. The owners are recorded as letting buildings to the rear of these to labourer’s families. The significance here is that buildings were designed in plot groups, and in that design the back lane is recorded as having a purpose beyond mere access. The principles which appear in this design have a clear relationship with the ideas applied in Charlestown and Ballaghadereen. Ballyhaunis lies on the edge of the Dillon estate.

Ballygar, Co.Galway (fig 5184), forty-five kilometres to the southeast has a set of service lanes giving direct access to the rear of all inner plots. These are visible in the 1836 map which shows the beginning of the village, and appear to develop in tandem with its growth. Clearly disciplined design is evident. Ballygar is immediately adjacent to Aughrane Castle, also known as Castle Kelly. Bence Jones (1978 p15) offers no clues to its designer but assigns it by appearance to the nineteenth century. It was occupied by Denis Kelly in the mid-19th century (Moore; Landed Estates Database) and he is recorded as developing the market and town of Ballygar in 1840. Although the plot depths are shallower than those in the Ballaghadereen and Charlestown cluster, the layout principles are similar.
5. 06. 00  Planning the Total Block

5. 06. 01  Measured evidence of advanced block planning

Planned layouts that addressed the block as a unit of organisation are not widespread but some can be found and reward scrutiny. Our survey has revealed a number of layouts, different in form but similar in advancement to those at Charlestown and Ballaghadereen, some of which suggest meticulously structured organisation applied at the scale of the block.

Gorey (fig 5185), originally a parliamentary borough, was founded in 1619 (Newborough) as part of the Plantation of Wexford. (Hunter 1971)(See 5.02.04). It appears to have suffered during an uprising in 1798, and may have been substantially rebuilt at the end of the eighteenth century. In the 1836 maps it is beginning to fill into a distinctly ordered structure in which the main street as its spine is flanked by a series of regular blocks generally 100m by 120m, with their shorter side to the main street, each containing approx. seven to nine plots. No plots have archway access from the street (5.02.04). Instead a service street runs strictly parallel to the main street at the tail or back end of the plots. By the relatively low level of plot occupancy we could assume from the 1836 maps that these streets were in their early development, but by 1870 they are well established and a number of finer subtleties of the layout become apparent. In a number of blocks, a long access passage is taken centrally
from the back end to bring a service route into the core of the block. In two of the blocks a further service lane is added, parallel to the street. Other blocks in the town outside this central system also have a service lane, though not as formally placed as those in the central system. Although by 1911 some of the access routes had become streets in their own right, having been widened to standard width, they did not appear to attract frontage buildings of any significance. Their service role to the main street appeared to be maintained. Fig. 5196 shows a conceptual diagram.

5185  Gorey 1911 (OSI)

5196  Gorey; Concept Diagram
A more complex system with similar objectives can be found among burgage plots in Mullingar, county Westmeath. Mullingar is an Anglo Norman Town (Andrews 1994). Greville Street and Earl Street form its original spine (fig 5197), with burgage plots to the north and south, which originally ran to the town walls. At the back ends of these plots are Blackhall Street, Bishopsgate and Church Street, now forming, close to the line of the original wall, tail end access lanes to the plots on Greville Street and Earl Street. The blocks to the north of Greville Street and Earl Street have a particularly interesting structure (fig 5197). With a regular frequency, between every two plots, lanes run south from Church Street, penetrating the block, almost to the boundary of its inner plots. This is not dissimilar to that which occurs at Gorey. In some cases where individual uses have begun to occupy the lane-end of plots, a new access system develops for the original plots in order to compensate for loss of frontage to the lane. Burgage widths are consistently greater on the north side of Greville Street, with almost the same proportion as that by which the plots are longer, in comparison with those on the south side of the street. Long outbuildings, running parallel to the plot edge appear to be characteristic of this area, particularly noticeable between Grove Street and Dominic Street. Similar buildings can be found in Cavan. In the seventeenth century, Mullingar’s patron was Arthur Forbes (Casey 1993 p415). Fig. 5198 shows, as for Gorey, a conceptual diagram.
At Athy, Co.Kildare, the block between Leinster Street and Mount Hawkins supports a process very similar to that at Mullingar though without the detail of the planned layout, where lanes which develop from the plot tail seam towards the street become residential over time, but only as far as the boundary between inner plot and outer plot, maintaining access only from the tail seam end. In this way the main street operation remains untouched by the development, merely losing its surplus land. This however is a nineteenth century process and at a later period the housing, small and substandard, becomes disused (fig 5201), the original plot reverting to commercial use associated with an expansion of buildings from the streetward side. Fig. 5202 shows a simplified modern state, while Fig. 5203 shows, within this, the primary plot subdivisions. Athy is an Anglo Norman town where common lane access routes running from the street to the rear are also visible, south of Duke Street.
5201 Athy Stage 2 1911 (OSI)

5202 Athy Stage 3 2011 (based on OSI)

5203 Athy Primary plot subdivisions
5. 06. 02  Evidence of block planning in towns of the middle size; fourteen cases

Block planning for naturally trading towns such as the three above attempts to set up a system which can then be entered or populated by traders and users according to the developing economy and role of the settlement. In the case of smaller towns or villages, particularly those founded by proprietors or landlords, their purpose is often predetermined within the framework of an estate, as is their size, scale and feasibility. Their total form therefore tends to reflect greater precision in a bespoke, modest but complete layout. It must follow also that, as towns instigated by particular landlords, these might be cleverly laid out with attendant pride for peer comparison, with sometimes quite meticulous systems of organisation. A similar circumstance appears to apply to military towns, which have a distinct purpose. Against this background the following fourteen towns, briefly described, are of particular interest.

5204  Bunclody 1911 (OSI)

Bunclody Co Wexford (fig 5204) is a planned or re-planned town. Properties on the Mall are systematically accessed to the rear by a combination of shared archways and laneways, running parallel to the plots, which are in turn deep. The lanes, arches and plot combinations are laid out in sequence. Lanes are not as a rule linked by a plot tail lane. The building groups which sit between them on the street are also composed architecturally in sets. The Mall is not very long and subject to a number of fixation lines in the definition of its northern plot depths. A mid-block access lane later extends itself in the twentieth century south of Chapel Lane. Bunclody, formerly known as Newtownbarry, was re-planned in its formal
layout by John Maxwell and James Barry from 1727 to 1737 (Monahan p65). Newtownbarry
house was redesigned by Sir Charles Lanyon in the 1860s (Bence Jones p225). Sir Charles
may have had a hand in some of the town's later layout or buildings.

Portumna Co. Galway (fig 5205) and Clonaslee Co Laois (5215) have similar plot access
systems to those at Buncloody. Although Portumna has no rear access laneways as such, it
has, between archways, side lanes and shared entrances, with a co-operative framework of
circulation between its two streets. Buildings appear also to have a level of calculated grouping. Clonaslee has a shared entrance gap between every set of two plots on the main street. In addition, it has a broadly concurrent line of similar buildings which subdivide the inner plot from the outer plot as one would tend to find in a residential morphotope. Local pamphleture suggests that Clonaslee was planned by the Dunne family, residents at Ballinakill castle. Ballinakill is not mentioned by Bence-Jones.

5216 Kilrush 1911 (OSI)

Kilrush (fig 5216) is a planned philanthropic town laid out at the beginning of the nineteenth century by John Vandeleur (Lewis 1837p205). It is formal and regular. A plot depth of 30m appears on both sides of Henry Street. This same plot depth of 30m is used on the north side of Frances street. However, for this block to create the desired relationship with John Street while also defining the precise edge of the market square, it must be one-sided, and so it is. Moore Street has rear access laneways on its south side. The town shows a very interesting relationship between the aesthetic objectives of townscape and the efficient organisation of plots, or between the visual and morphological objectives of the town’s plan. Mr Vandeleur, the town’s proprietor, is listed as being of Dutch descent. He erected the custom house in 1806. He also erected the market house and provided a site for the courthouse in 1831 (ibid. p205).
Ballinasloe (fig 5217), also a town of philanthropic origin, is an eighteenth century creation of the Trench family (Harbison p54). Their residence, Garbally House, was rebuilt in 1819 to designs by Thomas Cundy, after the previous house had been destroyed by a fire (Bence Jones p131). In the town, the deep grain of the main street plots is intensely filled and its orthogonal discipline is carried into the plots on one side of both Society Street and Dunlo Street giving an oblique shape to their form, not unlike that which results from polder subdivision in some Dutch towns. The north side of Dunlo Street has noticeable co-ordination of mews, while plots on its south side are served by Tea Street as a rear access route. The main street has in its south side a number of rear front-to-back access lanes in co-ordination with its frontal buildings.
Belturbet, Co.Cavan, (fig 5218) though earlier than Ballinasloe, is also a planned town, referred to as having ‘burgess acres’ (Lewis, 1837 p202) as allotments, or as unbuilt land within the town centre. These may have been located north of the main street, close to the town’s largest plots, where built form is conspicuous by its absence from the earliest maps. Lewis refers to Belturbet as having been developed by Stephen Butler in 1610, as part of the Plantation of Ulster, although Simms(1979) does not list it as part of such. Belturbet has a clearly planned centre. There is no archway access to plots from the street. An efficient set of laneways serves the plots from behind, most of these wide enough to be minor streets. Some of them do become such for a period (not unlike similar characteristics observable in Athy or Listowel). William Street and Patrick Street are typical examples.
In Tullamore, Co.Offaly, the main street has on its east side two major blocks (fig 5219). The northern block, having a total depth of approx. 80m, has a plot subdivision by which one third of its depth is given to rear plots which serve Chapel Street to its east. The southern block on the other hand retains a full 80m depth of plots to serve the main street. At the back of these plots the much larger block, of which they form a part, has a central market space as its focus. In a map of 1911 few of the surrounding plots address this market space with frontage. This may be related to the relative infrequency of formal markets (generally once weekly), observable when one looks at typical market diaries for Irish towns. The street would have given more consistent frontage profile than would the dedicated market place, although in this block, many of the surrounding plots did avail of service access from the market space. The location of the market space in the core of the block is something which shall be revisited in later discussion (12.01.01). Tullamore was rebuilt by the Earl of Charleville, Charles William Bury, ‘in an improved manner’ (Lewis p652) in 1785. The Earl’s new mansion, designed by Frances Johnston, was built close by, from 1800 to 1812, (Bence Jones P82). Johnston also designed a church on the east side of the town in 1815. He may have had a hand in the layout of the town. (See Chapter 13)
Fermoy, Co.Cork, (fig 5220) was laid out in 1791(Lewis p622) by John Anderson; entrepreneur, proprietor and ‘improver’. The layout displays skilled knowledge of townscape, as in the oblique side-stepped alignment of streets which lead southward from the square. This layout has similar design ingredients to those of Kilrush. The town had an apparently important role as a military base and its townscape devices may have been influenced by this, aiding its ease of defence. The original Barracks guardhouse stood on the south side of the square (Lewis p622).

Plots however are, relative to their central location, shallow, (perhaps a general fault of re-planned estate towns of this period?) (12.06). The plots around the square are inflexible for this reason. Even by 1911 most of these show 100% site coverage, with typical depths of 35m. The shallow plots between King Street and Princes Street have perhaps reduced the ability of this street to capitalise on its profile to a very important route. The town centre appears to have been severely restricted by space, between the river and a steep upward slope to the south. Elbow lane and Store lane provide core access to in the blocks north of Patrick Street. As the town developed outward to more level ground, plot size increased, such as for example on the east end of Patrick Street where the plot depth is over 80m. It is not clear whether or not the planning expertise was that of Anderson. Were there influences from elsewhere? Anderson built Fermoy house at the same time, as his residence (Bence Jones p125). The architect however is unknown. The house has been demolished.
In addition to towns which reflect the pride of proprietors, towns developed by the military for strategic reasons had the advantage of engineering expertise from the ordnance professions (5.02.02) and sometimes reflect this in their design and organisation. Newbridge (fig 5229), like Fermoy, had military functions. It is described by Harbison (1988 p256) as a town of no antiquity. Lewis in 1837 (p424) described it as a place of recent origin, having developed with the establishment of its barracks, in 1815. Lewis also describes it as having just one street. By the end of the nineteenth century however, it had acquired another secondary street parallel to the first one, and in the blocks between these, an interestingly structured framework of lanes and access routes had been laid out. These have similarities to those at Gorey or Athy. Newbridge appears to have acquired this framework around 1855 when the army garrison at the Curragh Camp nearby was developed, resulting in its residential expansion.
5230  Buttavant 1911 (OSI)

Buttevant (fig 5230) is referred to by Harbison and O'Keefe as a Norman foundation. It later became a garrison town, and Lewis interestingly refers to an association with John Anderson of Fermoy. The layout is formal and orthogonal. Behind the main street on both sides are mid-plot access routes which are straight and regular. This layout however appears to have been overlaid on the earlier settlement. O'Keefe (2010, p.67) suggests that Buttevant was originally developed as one of the new orthogonally-planned towns of Edward 1, possibly around 1277, although this would pre-date the Harwich colloquium by twenty years.

5231  Maynooth 1911 (OSI)

Maynooth (fig 5231) is also laid out to an orthogonal plan with its main street flanked by blocks giving site depths of 68m which are in turn flanked by parallel back access lanes, many of which have become minor streets in their own right. Horner (1994 p66) describes the first plots laid out in 1757 as having dimensions of 170 feet long by 30 to 36 feet wide.
Belmullet, Co Mayo, (fig 5232) lies at a north western corner of the Irish settlement system but its remote location has not reduced its exposure to meticulous urban planning. In Belmullet, plot depth is laid out according to the importance of the street. A long plot depth of 90m appears as consistent along both sides of the main street and on the south side of Barrack Street. A shorter but consistent measurement of 40m appears as the common extremity of the in-plot sector along a number of plots on Barrack Street. A shallower plot type of 25m depth also appears throughout the town. Lewis (1837) describes Belmullet as uniformly built, and refers to the involvement of Nimmo, Knight and Bald in the laying out of roads in the area. The informal townscape on the west end of the main street shows skill and calculation, by somebody who knew what they were doing. The town’s importance was enhanced by the location of the coastguard headquarters there in 1822 (Lewis). On the North West end of Barrack Street, in the nineteenth century, a back lane is constructed to serve a number of plots, obviously increasing their attractiveness.

The history of its formation is of particular interest. Pococke (1752) states that in about 1715, Sir Arthur Shean began building a town where Belmullet now stands. He also began building a canal known as Shean’s Cut, but it had silted up by 1752. In the early nineteenth century William Henry Carter inherited much of the land and began to develop the town to the plans of engineer Patrick Knight. (Haughton 1959 p11) Work started in 1825. Carter is also listed as an architect. Knight prepared a map in 1834 showing a northward expansion of the town including the re-cutting of the canal. (Haughton 1959 p11) The canal was reopened in 1851.
Jones Hughes (1961) points out that 1825 was the year in which work also started on the layout of Westport, Louisenburg, Co.Mayo, and Clifden, Co.Galway, some of which were now made possible by the extension of a road network into the West of Ireland.

A plan of Belmullet, dated 1830, described as 'Knight’s plan' is reproduced in the preambles to the Belmullet Town Renewal Scheme (Mayo County Council 1999 p2) (fig 5233). Unfortunately the source of the plan is not listed. It is recognisably of Belmullet but not exactly of the town as executed. As discussed above, Knight was one of many collaborators in the making of the town. What the plan shows is a highly geometric and symmetrical proposal for the layout of plots within blocks, where frontages are equally balanced around four sides of the block. Commercial corner plots interlock with those on adjacent streets (fig. 5234) suggesting the concept of designed ensemble in block layout, as sometimes found in medieval burgages (Haslam 2018 p144). A proposed canal is shown running along the service spine of the principal block, similar in position to that proposed at Monasterevin.
(fig. 5170). Although this was not included, the overall settlement (fig 5235) of Belmullet was built much as planned.

5234 Belmullet 1911 (OSI) Corner plot subdivision detail

5235 Belmullet Photograph by Alexander Campbell Morgan 1953 (Irish Independent Photo Archive, National Library of Ireland)

5. 07. 00 Larger Towns and Cities

5. 07. 01 The larger towns without rear access

It does appear that larger towns tend to have less-developed rear access systems. Tralee (fig 5236), Castlebar (fig 5237) and Monaghan (fig 5238) are large towns but with frontal dependence for access to most plots. Castlebar has an orthogonal frame in the layout of its main street but the potential development of easy service routes through such a frame appears never to have been explored. Monaghan does have some rear parallel laneways but a system of individual archways with short lanes forms its main connection to the rear of plots. No significant co-operative access systems are developed.
It could be suggested that towns which do not have an overall plan, but do have evidence of planning control, of plot groups, by a single proprietor, are most likely to demonstrate evidence of rear access structures in their 1911 state, but this pattern is not altogether consistent.

5240 Sligo 1911 (OSI)

Sligo is an Anglo-Norman town (Simms 1979) (fig 5240). In the early nineteenth century its property was largely under the control of two philanthropic landlords, Owen Wynne and Lord Palmerston (Lewis, 1837 p568). Yet there are no conspicuous clusters of either perpendicular or parallel access lanes in the central commercial streets, although some minor examples do exist. There is a discernible line of subdivision visible north of Castle Street and Grattan Street parallel to the street, dividing inner plots from outer plots, but no access routes of significance.

Because however of its strategic importance, Sligo was heavily contested, consequently destroyed many times and totally sacked in 1641. There is a significant diversity of plot size, relating to its different periods, making systems of rear connection difficult. This is perhaps a characteristic which larger strategic towns have in common.

The larger Anglo-Norman cities and towns such as Kilkenny or Sligo also appear to have relatively little alteration or improvement to the plot structure of their original Norman sectors
in the eighteenth or nineteenth century, though receiving additions to the fringe. Perhaps therefore a circumstance related to lack of flexibility, or established permanence, did deter infrastructural change to older blocks in the eighteenth and nineteenth centuries.

5241 Waterford 1911 (OSI)

Through Waterford, the Normans first entered Ireland in 1171. In the Norman and earlier Viking portions of the city (fig 5241), as identified by Givens, (2008 p228), there are virtually no archways or rear access systems. Plots running backwards from any side of a multi-sided block, of which there are many in Waterford, simply meet at boundaries of sometimes inconsistent configuration. Many minor streets do have apparent perpendicular lane formation but a study of the plot configuration within the blocks which they serve indicates that the lanes do not have sufficient reach to perform this access function. Waterford in its Viking core and Norman suburb has a high density of streets relative to occupied block area. The blind quays on the north edge of the Viking quarter, such as Coffeehouse Lane, are probably formed by the filling of urban structure to the waterfront line when the walls came down in 1690 (Givens 2008). Many blocks facing Merchants quay exist with 100% ground coverage and may survive without rear access because the block size is small. This is an important indicator of the stage at which the block is small enough, as consequence with fewer plots, to survive without service access, as in the earlier Viking layout. From the
evidence available however (R18,R22), blocks without some form of rear access do not commonly prosper.

5. 07. 02 The larger cities

Galway, Limerick and Cork, with greater age and importance, have progressed in block structure beyond most of the other settlements already mentioned, to a stage where the burgage cycle as defined by Conzen (1960) has passed its first climax and many blocks or urban sectors have been re-laid at a more intense plot layout, generally of fewer larger plots on more regular blocks. This stage does however reveal some circumstances of relevance to the process which has been studied in smaller towns.

5243 Galway  1911 (OSI)

Galway (fig 5243) was destroyed by fire in 1473 (Harbison 1988 p186) “clearing a way for the well laid out sixteenth to seventeenth century town of tower houses”. There is very little evidence of co-ordinated rear access structure in the maps of 1911. On the long central spine of Shop street there is but one archway on the north-west side of the street. On the south-east side, the block between Shop street and Middle street shows a recurring layout of plots with individual archway access to substantial service courtyards; a form which prevails throughout much of the city. Lewis (1837p646) refers to the older part as “built on the plan of a Spanish town; many of the older houses are quadrangular, with an open court and an
arched gateway towards the street.” Wood Quay, verging on residential suburban form, displays a rare case of a shared rear access system, as does Ballally lane on the south side of Eyre square. The framework of the Anglo-Norman town however does provide an intensity of streets which may indeed be adequate to reach all land uses without the need for access laneways, as we have observed in Waterford. Galway shows, in 1911, a conspicuous quantity of derelict plots within the established fabric, indicating a recent recession or contraction.

5245  Limerick  1836 (OSI) (colour; Ward subdivisions)

Limerick has three distinct areas within its city structure (fig 5245). The earliest is the English town, north of where the rivers join, where the Norman settlement was superimposed on the earlier Viking site. The Irish town, to its south, in the centre of fig 5245, was next to develop, followed by Newtown Pery, a grid-planned late Georgian extension to the south. The phased composition of Limerick is similar to Waterford. Unlike Waterford however it has a consistency of laneways serving its street structure from behind throughout its different phases. In Newtown Pery, the Georgian quarter, the block type and its layout characteristics are of particular interest. Harbison (1988 p234) describes this as laid out on Pery lands by Davis Ducart, for Edmond Sexton Pery (1710-1806), speaker of the Dublin House of Commons, 1771-85. Lewis (1837 p268) describes Newtown Pery as “having been wholly built within the last fifty years” preceding 1837.
This sector was laid out on property formerly called South Priors Land, acquired by the Pery family around 1770 (Lewis p268). In a Limerick map of 1823, prepared by James Martin Coffey (Coffey 1823)(fig 5246), the site disposition in part of South Priors Land shows a dimensioned layout of blocks with space allocated for rear access laneways to new commercial properties and also shows the clear dimensions of the subdivisions of these properties. Typical frontage widths of 100 (which one assumes to be feet), 50 and 48 are shown, but with consistent plot depths of 150. This plot depth of 150ft or 45m appears to become common as the trading depth of most commercial plots in many towns at this period.

Although sites appear generous, blocks appear small, at average 300 x 300ft (a sample measures at 276 x 301). This block size, of 90m edge, would sit on the short side of
average, as observed by Siskna (1998), but central in the size range regarded as optimum (Siskna 1998). Plots within these, generally three per block length, are laid out obviously for commercial use. The layout shows extensive back access lanes.

5247  Coffey map of Saint Frances Abbey  1823 (colour; graphic; no key available)

Coffey also completed a contemporary map for the Saint Francis Abbey area of Limerick (fig 5247) which forms an interesting comparison as in that map site layout had been restricted by the fixation lines of surrounding urban form while here in South Priors Land sites were developed on free land, confirming the South Priors dimensions as optimum.
A Goad map (fig 5248) of 1897 shows the South Priors area in its developed state.
In Cork, the area south of Patrick Street, between it and South Mall, has a block structure similar to Limerick. Lewis (1837 p408) refers to recent extensive improvements here also.

The developed blocks of Cork, Limerick and Dublin, being at a different rank of urban formation, do not provide direct comparison with the metamorphosis examined in smaller towns at this stage. In the case of these cities however, orthogonal grid layouts show the dimensions sought in typical layouts of Irish urban context at specific periods. In Dublin, the presence of service lanes is particularly interesting within the orthogonal blocks created in the north inner city. The study of these blocks tempts research for another time.

5.08.00 Reflection

5.08.01 Summary of principal findings on the heritage of block organisation

In many Irish towns, clear attempts to organise the block are present, with clear principles in that organisation. Patterns of individual frontage access systems are commonly identifiable as are developed systems of shared semi-private access through the plot tail.

Access systems which distinguish inner from outer plot become highly developed in the nineteenth century, including combinations which reach the inner plot from the tail seam and those which run between inner and outer plots. The latter develop out of an acknowledgement of the different functions of these plots, balancing the need for privacy against the convenience of access. Such systems set up a framework which is not necessarily redundant in the latter-day re-allocation of the outer plot, serving with great flexibility a subsequent range of land uses of different scale, developing an interesting relevance for modern layout, as explored later (9.03.02).

Both individual and co-operative systems of service access developed throughout the history of town planning in Ireland. Shared service access appears to be standard in new towns of the nineteenth century, common in the west of Ireland, particularly in County Mayo, where towns are newer. Elsewhere access lanes are frequently retrofitted to older towns.

Plot depths are consistently readable as period-related, over many sample towns. Those of the Norman period are deeper whereas those of the eighteenth century are frequently defined by the space left over following the prioritised layout of the street framework.
The layout progression of systems of shared rear access does not relate to historical evolution as much as it relates to random opportunity generated by the scale economies of plot groupings. Tail seam access lanes and access lanes perpendicular to the street are both found in many periods. In some Norman towns they are used in combination, though not in towns of Viking origin.

Larger, strategic, heavily-contested towns show less-developed rear access systems in their centres. This is possibly due to absence of opportunity for co-operation between the variety of ownership structures typified in the complex history of such settlements.

Incentives to insert alternative service routes do not appear to be conspicuously related to any ideal vision or distinct period objectives, but avail of many regulations, which address both the provision of roads and the coverage of sewers. Philanthropists and improvers also show an obvious role in the acknowledgement of rear access as desirable, perhaps led by peer competition. In the nineteenth century in particular, the design of Irish towns benefits from patrons, philanthropists and military engineers.

The empirical findings of this chapter have attempted to record base-line observations on the historical block structure of Irish towns before the mid-twentieth century metamorphosis, outlined in chapter 8, begins to alter, dismantle or adjust it.
Chapter 6

Comparison with Towns in Britain

6.01.00 Comparison with towns in Britain

As part of the need to set in context observations on town form in Ireland, this form is compared to that of another country of similar socio-spatial history. A sample of towns in Britain of similar rank and population is thus examined, over the same period of historical development.

6.01.01 Choice of Towns

To select a comparable sample in Britain, the average town-size of the Irish sample is identified from population rankings of 1911. Taking that size as mid-rank in Britain, a cluster of towns of similar size, centred on that population, is assembled. This process yields 58 towns in England, Scotland and Wales. This is then taken as a sample field for comparison. The towns of this sample are listed in appendix 4.

Using Edina Digimap (University of Edinburgh), cartographic overlays are examined in a methodology similar to that applied in the analysis of the Irish sample, seeking comparable change of form over the same two hundred year period. This is supplemented by historical observation from additional documentary sources where available.
6. 02. 00 General Form

6. 02. 01 Comparing Settlement Form

There are historical differences between Britain and Ireland which have created towns of different form. Many towns in Britain will have been affected by the Industrial Revolutions of the late eighteenth and early nineteenth centuries, events which had less impact in Ireland. More importantly perhaps Britain’s heritage of Roman and Anglo-Saxon underlays may have pre-dated the very existence of towns in Ireland (Andrews 1995 p25) laying as they did a foundation for subsequent settlements (Bell 1969 p14). A structure that has more underlays will invariably develop a more complex palimpsest.

Outside these influences however many British towns look, in plan-form, very similar to those in Ireland. Honiton, Devon (fig 6005), Taunton, Somerset (fig 6006) or Sevenoaks, Kent (fig 6007) for example are towns whose layout forms, in their maps of 1905, look like any town of similar size in Ireland. Kilmarnock (Scotland) (fig 6008) has a similar spatial structure to that of Clonakilty, Co. Cork (fig 6010) although the morphological story which delivers this structure may be slightly different.

6005  Honiton 1900  (Edina Digimap)
6006 Taunton 1880 (Edina Digimap)

6007 Sevenoaks 1880 (Edina Digimap)
The British sample is searched for characteristics which have been found to be of interest in the Irish sample. Examination therefore focusses in particular on how the plot presents itself to the street and how the plot is served by systems of access.

6.02.02 Street hierarchy and plot orientation.

When one looks at maps of towns in Britain after having looked at similar maps of Irish towns some patterns are immediately noticeable. In older towns of Britain, developed over many periods, streets tend not to hold a conspicuous hierarchy but have frequently evolved to states of equal role. Thus in a town which may have been originally laid out in burgage
plots, the original distinction between a primary street, on to which a plot fronts, and a secondary or service street, on to which it has rear access, may not be immediately recognisable.

In the centre of Warrington (fig 6012) for example, the area of Cairo Street or Ryland’s Street displays an open permeable structure with a great density of streets and small blocks. In the 1920 map of Warrington where plot fusion is tending to respond to demand for site assembly, as was typical of the period, it is difficult to establish a definition between front and back in many plots, since access comes from many directions and the plot edge is seldom far away from any side of the block edge. Although each plot may, in its own layout, assign itself a back and front, the imperative within an urban system to organise this as consistent between any number of plots, as would occur in medieval burgage layout, is not called upon. This characteristic becomes quite noticeable throughout the sample chosen for examination, with particularly clear examples at Greenock (fig 6014) and Salisbury (fig 6017).
6014 Greenock 1900 (Edina Digimap)

6017 Salisbury 1880 (Edina Digimap)
The Scottish town of Alloa (fig 6019) is typical of a structure where the strong high street as spine is readable, but not flanked by parallel service streets as it might have been from its fourteenth century origins. Its back access is instead supported by many laneways or narrower streets, the forms of which obviously come from a broad range of generating conditions, a situation less common in Irish towns of typical Anglo-Norman origin such as Carrick-on-Suir (fig 6020). Wrexham in Wales (fig 6021) is similar in circumstance to Alloa, but with an interesting variation. Here the strong high street is flanked on its north side by many segments of competing land uses freely generated by the importance of its industrial past. But on its south side it is still flanked by burgage plots complete with back lane, due to the fact that they are limited to their original state by the adjacent fixation of St Giles church enclosure.
Where continuity of maps is available, study of the sequential relationship between front and back streets, from the early nineteenth century to the present, can reveal change in the constituents of this relationship. If one looks at the development of Dumfries (fig 6022, 6023, 6024), for example, to the block between the High Street and the next parallel street to its west, one finds interesting signals of the importance of these streets relative to each other. The block is made of almost regular plots which have a front to back depth of approximately 76m, developed to their maximum density in the 1860 town when they have front to back lanes lined with blind-back buildings. It is clear from earlier maps that High Street was the primary spine. Archways are consistent on High Street, though common on both frontages of each plot. The relative importance of each street is however reflected in the depths of frontage buildings, greater to the east than to the west. In maps of 1930 and 1960, this priority becomes emphasised as open access begins to advance over the plots on their western or service end. One can therefore look to the internal organisation of plots to define the original or emerging frontage role of surrounding streets.

6022  Dumfries  1890  (Edina Digimap)
6023 Dumfries 1930 (Edina Digimap)

6024 Dumfries 1960 (Edina Digimap)
The centre of Bedford (fig 6025) has a frame of orthogonal streets in some of which the front to back relationship across plots is today very clear, even though such streets do not appear to have been designed with any hierarchy. In a John Speed map of 1611, they already exist, illustrated as trading streets of equal priority. In the map of 1920 however St Peters Street appears to be served from behind by Lurke Street, running parallel to its south, while High Street appears to be similarly served by Howard Street to its east. Average plot depth here is approximately 68m., close to that found in Irish towns at the same period.

6. 02. 03 Structured rear access routes

Elgin, Scotland, in its map of 1900 (fig 6030) presents an almost perfect settlement structure with a central street forming its spine lined by burgage plots many of which accommodate rows of blind-back houses. This structure is edged on its north and south sides by service streets, running parallel to the high street at a distance of approximately 120m. These are named North Lane, or Blackfriars Road, and South Street, indicating in their titles a correspondence, and thus a recognisable similarity of function. The relationship of these to the central street represents an almost textbook layout of a rear access support system.
6030 Elgin 1900 (Edina Digimap)

6031 Corby 1900 (Edina Digimap)
Corby, Northamptonshire (fig 6031) has an interesting version of this system. Although the older form of the town has been virtually wiped out in post-war redevelopment, a map of 1900 shows it still largely in its original state, having a conspicuous rear access lane running along its southern perimeter, parallel to the main street at a distance of approximately 65m. The lane is rather similar to those which appeared in Irish towns during the nineteenth century. In Corby it carried the name Back Way, suggesting its distinct function. By examining the party wall boundaries from plots on the main street which connect with the lane at right angles one can see that these do not correspond across the lane to plot boundaries on the other side of the lane. From this it can be concluded that the lane is at least as early as the subdivisions of surrounding lands, giving a valuable insight into the age of the system. Corby as a settlement dates at least from the twelfth century and possibly earlier, having been recorded in the Domesday book. It was a mining centre for iron ore.

Tregoney, Cornwall (fig 6032) has a distinctive lane route around its southern side, not unlike that at Corby. Here also, the plot boundaries which abut the route from both the town side and the outer side do not correspond across the route. Beresford (1967 p411) suggests that Tregoney is relatively late but was in existence by 1197.
Brackley, Northamptonshire (fig 6033) which appears to remain virtually unaltered from the first Ordnance Survey maps until the 1960s, has a single main street, with one back street running parallel to it at the tails of its burgage plots to the west, displaying the same tail seam antiquity as at Corby and Tregoney. Brackley appears to have been founded sometime before 1173 (Beresford 1967 p468)

6.03.00 Origin of Rear Access Routes

6.03.01 Access routes as Roman heritage

Secondary streets for access or service existed in Greece and Rome (Morris 1972). One would therefore expect to find them in Roman Britain and indeed one does. Dorchester (fig 6040) displays a consistent framework of plot-tail access streets around its original Roman core. High Street West is served by Prince’s Street and Colliton Street. High Street East is served by Durngate Street. South Street is served by Trinity Street and Charles Street.
In Colchester (fig 6041) the burgage plots on the south side of the High street are served with rear access by the parallel Culver Street. In nineteenth century maps these plots, of
approx. 53m in depth, still maintain a robust regular structure for virtually the length of the street. Colchester is also a town of Roman origin with many of its layout characteristics surviving from that period. Barnstaple (fig 6042), also with Roman origins, shows similar characteristics, its centre block between High street and Southport Street, served by a continuous system of back lanes through routes such as Green Lane, Church Lane and Market Lane.
Perhaps because towns from the Roman period in Britain have experienced so many socio-spatial overlays, some carry a particularly complex relationship between plot and street. In Exeter (fig 6044) the progression which takes place in the relationship between Smythen Street and Fore Street is an example of this complexity. Fore street may be described as the current High street but Smythen Street, to its south east, running parallel to it, had been the ancient Roman road. Between them are regular rectangular plots of 39m depth which may have changed their orientation according to the priority of each street but are usable in either direction. These are visible in the 1890 map. Although Exeter was heavily destroyed in the Second World War, its original plot structure has been largely retained in the rebuilding which followed.

6044 Exeter 1900 (Edina Digimap)
Chester (fig 6045), also of Roman origin, has of course a unique morphology, particularly in its central streets with its Rows or double-deck frontage buildings. Behind many of the streets on which these occur are narrower parallel streets which operate as virtual back lanes. These can be recognised as servers to the backs of plots which have frontage to major streets such as Eastgate Street and Westgate Street. To Westgate Street for example Commonhall Street clearly has this supporting role. The centre of Chester remains substantially as the Romans laid it out, the perpendicular relationship of the central four streets being a standard Roman arrangement, although Hartwell and Pevsner (2011 p168) do suggest that some aspects of Chester’s Roman origins are still not fully understood. More recently, Grosvenor Street, designed in 1825-30 by Thomas Harrison as the first major
intervention into the Roman Grid, (Hartwell and Pevsner 2011) appears to run roughshod diagonally across a segment of the old fabric, to link with Grosvenor road as a new approach to the city centre from the south west. Here the plot structure behind the facades contrasts with that of the more established streets by having poor orthogonal depth available to serve its frontage plots.

6.03.02 Norman towns and late medieval layout

The strong relationship between plot, street and access structure is also a feature of Norman and late-medieval towns in Britain. In a 1900 map of Honiton, Devon (fig 6046), clearly-structured service streets are visible to the back of properties along High Street. King Street on the south is one of these. Honiton was founded between 1194 and 1217 (Beresford p421). It has been described (Cherry 1989 p493) as a typical medieval plan, having a main street and a back lane still evident on its south side. The description suggests the back lane to be as typical as the main street.

6046 Honiton 1900 (Edina Digimap)
Similarly in Hereford (fig 6047), the High town and High Street are flanked by streets on each side which run parallel to the spine, at various distances but consistently following a direction determined by the direction of the main street. These include Bewel Street, Maylord Street, West Street and East Street. Kropf (2011 p397) identifies this part of Hereford as distinctly Norman in origin, added to an ancient walled town of Anglo Saxon origin to its south.
In the 1890 map of Lymington, Hampshire (fig 6048), the High Street also appears as the clear spine of the town, flanked by burgage plots. Along the tails of these plots, back lanes run parallel to the High street. Beresford (1967 p444) suggests that these elements acting in combination would be typical of the thirteenth century, concluding that this section of Lymington was founded sometime around 1271.
Some aspects of Ludlow, Shropshire (fig 6050) are of particular interest in layout. Ludlow is referred to by Beresford as a classic example of a Norman plantation town, founded between 1086 and 1094. Beresford explains that the plan of Ludlow incorporated within its walls a system of streets in grid format. Four of these ran north to south, intersecting a series of broad street spaces which ran in an east-west line near the north end, at the town’s centre. Unusually for a town however this was overlaid by an extension to the medieval castle at its west end, at a later period, the overlay virtually wiping out one of the four streets.

When one looks in detail at maps of Ludlow, one of the most interesting aspects of this original layout is the fact that the central frame of streets is interwoven with service lanes, or evidence of their existence. These are given distinct positions as back up to the central spaces. Raven Lane, Bell Lane, Brand Lane and Silk Mill Lane are critical secondary passages in the service of the town centre, appearing in a carefully laid relationship. Penrith, Cumbria (fig 6051), in its 1900 map, contains a similarly intense framework of streets, interlinked by a framework of lanes, here less conspicuous in a much less-orthogonal layout, but acting in combination to give permeable access.
Peebles (Scotland) (fig 6052), a late Norman settlement, shows interesting access links along the tail seams of its high street plots. In a map of 1911, the lane on the north side bordering the Cuddy pool is not continuous as a through public link in the town’s High Street system, yet it does give access to every single plot, thus indicating very clearly not a public but a distinct semi-private service role.
6. 03. 03 Nineteenth century towns and inserted access

The tendency for towns in Ireland to develop service access routes in the late eighteenth and nineteenth centuries has strong parallels in British towns. In parts of Warrington (fig 6053) many of the more important streets appear at the end of the nineteenth century to have developed a potential server in the presence of a minor street as back lane. Looking at a map sequence in the nineteenth century one can see that Bridge Street over a seventy-year period develops clarity in the rear access route to its plots, which it did not previously have. To the west, Barbauld Street develops as a new route of access while, to the east, a clearance of small irregularly shaped plots allows access to develop to the rear of buildings fronting onto Bridge Street.

In newer urban development at this period the distinct service access lanes become normal. Most of the redevelopment of Wetherby, Yorkshire (fig 6054), for example, attributed to the early 19th century (Leach and Pevsner, 2009 p750) such as that at York Place and Victoria Street, appears to introduce back lane access, while the concept is not conspicuous in the earlier streets of the town.
6054 Wetherby 1900 (Edina Digimap)

6055 Harrogate 1900 (Edina Digimap)
Harrogate, north Yorkshire (fig 6055) was, like many other spa towns, subject to elaborately planned development in the nineteenth century. Many blocks, of both commercial and residential use, were built close to its centre. Here the layout structures, containing extensive frameworks of back access lanes, are very similar to those which also appear in towns of the same period in the west of Ireland. Colin and Rose Bell (1969 p120) note that Harrogate hardly existed in 1821. Leach (2009 p308) indeed suggests that most of its development took place between 1841 and 1881, during which its commercial centre was designed by Hirst of Bristol.

The central area around James Street and Parliament Street was obviously remodelled from an earlier layout, parts of which persist in maps of 1870. Here the north eastern end of Cambridge Street, contains a meticulously worked framework of regular back lanes serving every street. This is carried into residential areas such as Cheltenham mount, where one would expect to find them anyway at this period. Harrogate’s Royal Pump room was built in 1842 (Leach 2009 p308), identified as the moment of peak fashion in the history of the resort. Similarities in layout structure suggest that Harrogate may have had influence on some Irish towns developed at the same time, such as Charlestown and Ballaghadereen (5.05.04). When one measures plots one finds close dimensions common to all three towns, which may have been established as best practice.

6. 04. 00 Reflection

It has been suggested that towns had a much later development in remote parts of Scotland and Wales than in England (Aslet 2010 p.9). If this were true it could be assumed that for similar reasons of remoteness the development of towns in the West of Ireland might also have been late. One might conclude indeed that this common characteristic of remoteness introduces a similarity between some towns in Ireland and those in Scotland and Wales, whereas the longer historical process of formation of towns in England has left, in many overlays, a more complex structure. Because later towns have gone through fewer periods of distinct direction in thought they are perhaps less altered. Planning intentions therefore, whether containing particular ideals or not, are more likely to survive.

Whitehand (1969 p110) suggests that, although throughout most of Europe the majority of towns were already in existence by the fifteenth century, new towns continued to form until
much later in Scotland, Ireland, Scandinavia and Eastern Europe. Whitehand also observes that new towns founded in Scotland in the sixteenth and seventeenth centuries tend to follow medieval forms. This could also apply to some towns in Ireland such as Bandon which, though early-modern by date, follows an Anglo-Norman form.

Elgin, Scotland (fig 6030), which we have recognised as the perfect case study town containing in a pure state all of the characteristics which we have found in parts of Ireland, could, in the far north of Moray, be defined as remote. Alloa (fig 6019), on the other hand, recognised as more complex in its structure, though also in Scotland, is not remote. Alloa is similar to Wrexham (fig 6021) retaining some aspects of purity but complex by the influence of an industrially active context. The difference between Alloa, near the core of thought and re-thought, and Elgin, near the purity of the edge, is perhaps reflected in a similar difference between those at the core and edge in Ireland.

This comparison however triggers a significant relationship to some of the observations cited in chapter five. Although many towns in the West of Ireland may be less complex due to their remote location there is an important subset to this circumstance. The late arrival of the road network to some parts of the west of Ireland (5.06.02) (Jones Hughes 1959) was a condition that caused towns in such areas, particularly in parts of Mayo and Galway, to develop later than those in many parts of the east. In this later formation they also avail of a period of more planned classical form than that of earlier organic towns of the east. Their remoteness in addition causes the purity of their planned form to be more protected from palimpsest. As a result some particularly remote towns retain a much more advanced layout than do their equivalents in the east.

6060 Westport 1911 (OSI)
Findings show that Charlestown had a particularly advanced layout but also Westport (fig 6060) and Belmullet (fig 6061) are towns which, compared to Navan (fig 6062) or Naas (fig 6063) in the east, are laid out with an aseptic classical design, not subject to the layers of subsequent activity which would have altered and superimposed anything on that layout. Belmullet has a greater purity, in comparison with Navan or Naas, just as Elgin has, in comparison with Alloa or Wrexham.
Empirical work on modern towns

Chapter 7

Forces of Influence on the modern Irish town

7.01.00 Introduction; Incentives, Plans and Market Attraction

The first Irish planning legislation of the modern era, the act of 1934, was passive and non-mandatory, providing a facility for municipal authorities to initiate planning schemes for towns, should they wish, or should they have the resources, to do so. Many of the projects facilitated by this legislation show schemes which would enhance towns by the opening up of boulevards and street connections, the clear objective of which was to improve the experience of townscape in the scale of the existing street system. Most however were stillborn. Some showed aspirational street widening lines which, had they been achieved, would perhaps have been deplored today by planning historians. The maps from which evidence has been extracted to inform the discussion in chapter 5 show that most Irish towns show very little structural change at their centres in the period between 1930 and 1960.

7.01.01 The 1963 Planning Act and traffic

When the 1963 planning act introduced a mandatory requirement that every town would prepare a development plan within five years, including in particular a provision for the development of traffic management, the leading issue was an aggressive encouragement of more efficient circulation routes. At this stage solutions had moved on from the reactive idea of widening central streets. Now almost all towns prepared plans for their by-passes and inner distributor routes, in the manner of the Buchanan models (MoT 1963) of the time. The resulting plans were very similar to those of the same period in British towns. The principal force of change was now the growing use of the car (02.05).

At this stage, the through route and its traffic could no longer be accommodated by central spaces and as Marshall illustrates (2005 p5) through-route traffic was accordingly removed
from the high street. Heavy traffic was redirected to the arterial distributor zone where the
route and its associated spaces would lead to new arrangements in the perimeter of the
town centre, prompting a very different operational structure. While some towns had to wait
until the end of the century to see their traffic organised, the nineteen seventies was for
many a period of extensive route modification. By-pass and relief routes were listed as
objectives in the development plans of most towns.

Although such arrangements attempted to separate traffic from central spaces, this
separation did not sit easily in smaller towns. Here land uses are largely mixed and of small
scale, so wherever the innermost edge of the arterial circulation lies close to the central
activity, a desired interface persists. Separation of the town centre retail core from the
movement of the car, induced by arterial road frameworks, thus generated a distinct counter-
reaction by the user which focussed on re-connecting this interface.

7. 01.02 The Relief Route

The by-pass and relief routes, running around the edge of centre in order to link radial
routes, skirted the tail seams and backs of plots that faced the main street, exposing the idea
of vehicular access to the soon-to-be-derelict backlands, once these plots subsequently lost
their residents, as they would do by the end of the decade (8.03.01). The arterial traffic
infrastructure thus laid the ground for the block morphogenesis which would follow.

From the Rank C (3.05.01) list of sample towns, figs. 7011, 7012, 7016 and 7017 show two
eamples of towns at similar development when they were going through the first stages of
this transition. In both Roscrea (figs.7011, 7012) and Castleblayney (figs.7016 and 7017) the
recently inserted relief route, linking two radial routes in order to carry traffic past the Main
Street, can be seen to be opening up land for car parking, already enticing the supermarket
to address the car park as primary frontage.
Though referred to as a by-pass the early by-pass of the nineteen seventies was generally a relief road linking radial routes within the town structure in order to by-pass the most central congestion. This followed a function similar to that of the circular road of the nineteenth century (5.03.03). Such by-passes offered short diversions within the routes of existing main roads. However, their function was viewed by many authorities as that of opening access to perimeter land for the expansion of the town (R12). A later phase of by-passes on national main roads around towns such as Swords or Castlebar, skirt the edges of these towns, but with frequent access to the perimeter services of the town.

Under the National Roads Authority (1993-2015) more recent motorways by-pass the town by a distant route, linked to the settlement by one or two exit routes, without access to adjacent lands. In its modern phase the pre-occupation of the national route is to facilitate long distance linkage between towns and cities, clear of the local circulation framework of each town.

7.01.03 Market attraction to middle-sized towns.

Some factors in particular are significant as inducements to the pulse of development experienced by Irish towns in the late twentieth century and into the twenty first. With increased user-mobility, central place structure had been changing, prompting towns to seek their place on a newly defining hierarchy. In response, national and international retail chains increasingly looked to middle-rank centres in order to reach a population, now mobile, which was in turn sourcing a framework of reachable service towns (R25, R06). The location of these chains, as outlined in chapter 8 is in many cases new.

A significant growth of retail floorspace took place in the nineteen eighties, prompting retail guidelines by Government as an aid to planning authorities to control the locational development of this sector. The current guidelines (Department of the Environment, Community and Local Government 2012 p11) attempt to strengthen the association between retail location and the hierarchy of towns supported under the Irish National Spatial Strategy (ibid 2002). Each town is now obliged to have a retail strategy, the principal objectives of which are adopted into its statutory development plan. Recent figures show that the increase in convenience goods floorspace, located in both town and city centres between, for example 2001 and 2007, was 28% (Department of Environment, Heritage and Local Government 2010 p6)
Clearly associated with both the retail outlet and the car was the change in Ireland, as elsewhere, in the relationship between the supermarket, the refrigerator and the use of the car, facilitating bulk shopping by car. The domestic refrigerator became part of the Irish household in the period from 1948 to 1963, although it did exist in some urban households as early as 1936 (Kenneally, 2015). The frozen food department of the first supermarkets had responded in almost all towns by 1963 (R02), and by 1970, convenience shopping in bulk had become the norm. The town was now serving a car-borne population.

7.01.04. Urban renewal incentives inducing change

The initial migration of residence from town centres (8.03.01), and the resultant signs of dereliction in the central fabric, led in Ireland as in many European countries to the formation of the reactive trend towards urban rejuvenation. Incentives designed to encourage urban renewal were therefore introduced and have since the nineteen eighties accelerated the normal process of urban development and led it in certain directions. An understanding of the effect of these gives an important dimension to our thesis. Much development is shown to have been induced by fiscal incentives.

In Ireland, support for town and city regeneration led to the introduction of the Urban Renewal programme in 1986, designed to attract private investment into urban regeneration. The Finance act of 1986 introduced tax incentives for investors, and specific urban areas were designated in which these tax incentives would apply. The first nine areas so designated were in Dublin, Cork, Limerick, Waterford and Galway, and were located in blocks within the urban cores, where dereliction had been conspicuous. In these areas tax remissions became available to those who undertook expenditure of a capital nature on the construction or refurbishment of buildings. There would also be a double rent allowance claimable against trading income for ten years for those trading under new leases in such buildings. Owner occupiers of newly-built or refurbished dwellings in such areas could also claim allowances for capital expenditure, as could landlords. In some cases remission of Local Authority rates could also be claimed.

In 1988, designation was extended to include areas in nine further towns. The list now included Athlone, Castlebar, Dundalk, Kilkenny, Letterkenny, Sligo, Tralee, Tullamore and Wexford. In 1990 a further eight towns were added, followed by a further twelve in 1994 and one further town in 1995. With each new addition, the designation incorporated smaller towns. In 1996 the total number of designated areas in these towns exceeded one hundred
(KPMG, 1996, p8). Up to this time, the fiscal nature of the incentives had remained substantially as instigated, although there were some variations. One significant addition, in 1994, was the ‘Living over the Business’ scheme which in some designated areas, provided incentives for the redevelopment, for residential use, of vacant floors above ground floor commercial uses in certain streets. In most cases designation lasted for three years, in order to hasten investment, but there were some extensions of time where initial response had been slow, particularly in the first phases. Many towns which were included in the first phase of designations were also included in subsequent phases with further areas of designation added.

In 1996, when designation had been in existence for ten years, government commissioned a study to report on its worth and effect (KPMG, 1996, p1). A number of significant observations emerged in this study. It was found that of the investment attracted by designation, only 11% went to refurbishment, the remainder to new construction. The simplicity and marketability of new building was apparently more attractive to developers and investors. Surveys showed that this caused older buildings which were in substantially good order to be abandoned. Where newly-constructed floorspace qualified for incentives it attracted many businesses in the rental sector to move from older buildings, leading to migration of use from established urban fabric. The study also concluded that because development tended to be sporadic and piecemeal, according to the initiative of individual landowners in particular locations, it missed opportunities which effective planning might have been able to co-ordinate more strategically.

Accordingly, in 1997 a new Urban Renewal Scheme was announced which, drawing on the findings and recommendations of the 1996 report, introduced the concept of Integrated Area Plans. A requirement of this scheme was that Local Authorities were obliged to prepare plans for areas to be designated which illustrated the social, economic and spatial effects which proposed incentives, and consequently developments, would have on the surrounding town. These plans were submitted to government for scrutiny in early 1998 and in the following year forty-three towns were granted designation, focussed on particular Integrated Areas.

The final programme of designation was that of the Town Renewal scheme 2000, introduced in July of that year in which 100 smaller settlements which had not been included in earlier schemes received designation. This phase of designation was site-specific within detailed plans for each settlement. Local Authorities were now required to establish a case for designation in response to detailed guidelines issued by government in the previous year.
Each site was required to have an outline economic appraisal indicating its case for incentives. It might be suggested that this phase had a political function of collecting for benefit settlements which had not been included in earlier phases. It has been suggested also that this scheme had the objective of reducing the then popular tendency to construct dwellings in the countryside, by designating for incentive, land in towns and villages which was already serviced (Grist 1999, p60). This in principle might induce intensified use of urban plots. There is however no statistical evidence of this effect.

All of the six case study towns (3.05.01. Table 3009) received designation. Sligo was first designated in 1988, and the block examined as case study was partially designated under an integrated area plan in 1998. Ballina, Clonmel and Longford were designated in 1990. Roscommon was designated in 1994 and Roscrea in 2000.

7.01.05 Strategic Planning

Although areas which received designation were formally adopted for inclusion in the development plans for towns, designation was area-specific and like the development plan the designations were passive, dependent on a response by developers and landowners. Development plans however were empowered to incorporate strategic infrastructural objectives in support of designation for the common good.

An historic search of development plans from the early years of designation was, for the work in hand, undertaken seeking evidence of active input into the operational structure of town centres, in particular seeking evidence of focus on the locational role of convenience stores and car parks. Twenty plans were examined, drawn from the towns listed as Rank C in chapter 3 (3.05.01). In fourteen plans a recognisable objective was included to give preference to the retention of convenience anchors in the centre, (as in DOE; UK, PPG 6, 1996). In all twenty the development plan stated an intention to require and support the provision of car parking in association with all central development. In two towns in particular however the development plan indicated also a specific intention to locate car parks and anchor stores strategically in support of a potential layout structure for the town centre.

The first of these was the Development Plan for Wexford Town and Environs 2002, a plan very clear about its intended development structure for the town. Here the centre is dominated by a long narrow main street, running north/ south which has been pedestrianised for most of its length (figs.7020 and 7021).
To the east, one block away, is the sea to which the town has over time extended to provide a waterfront. The waterfront is less active than the main street. To the west, also one block away, a strong precinct of occupied traditional housing has formed a stable land-use to the rear of, and for almost the full length of, the main street. As a retail and social environment the main street is the most attractive space of the town centre. The Development Plan
recognises this in a strategy which channels support for the operational structure of the centre, attracting car parks and shopping anchors into a relationship that is not unlike that of a bi-polar shopping mall. The strategy states as follows; (with fig. 7025)

“To direct all activity from suburbs onto radial routes, which as collectors feed the Town Centre at its most supportive parts, at the north and south ends of Main Street. The strategy proposes to develop four radial routes from by-pass to centre, two leading to the north of the main street and two to the south. These would feed good quality car parking which would be provided in close proximity to high quality shopping. This would maintain activity at each end of the town centre, at strategic locations, with the centre proper developing as a spinal route linking the activity of these two nodes. These two nodes would define the town centre at either end and within it efforts would be made to encourage the intensification of under-utilised sites, in order to consolidate the existing form of the centre”. (Wexford town and environs Development Plan 2002, Section 2, [2.1.1] Transportation and Urban Structure p18)

The Wexford strategy had mixed success (R02). The northern node developed quickly providing parking and anchor stores as attractors. The southern node was slow to develop as the availability of land was dependent on the clearance of an obsolete industry which took longer than expected. Within this time lapse the competitive success of the northern node developed a stronger image for users and investors.
The total length of the Main Street between nodes is 900m, which is over twice the typical distance which a user tends to walk from a parked car (Hillier Parker 1997). The southern section of the street thus lost its reach to the profile of the northern section. Subsequent development plans have attempted with various incentives to correct the imbalance.

The second example occurs in Letterkenny, a town also dominated by a long main street. Here a similar strategy was encouraged in the 1997 Development plan. The plan succeeded in attracting anchor store and car park combinations to both its northern and southern nodes. However just as the resultant activity might have been about to animate the Main Street a parallel relief road was opened on which users were able to drive from one node to the other, by-passing the street.

7.02.00 Reflection

It could be suggested that the natural development of towns was slow until the mid-twentieth century. From then onwards, technological developments would have a variety of effects on how people would use the town. The mobility of the car was a major force in the diffusion of urban residence as was the re-organisation facilitated by the refrigerator and the supermarket. The scale of market change had perhaps more impact on the separation and ranking of towns than on the town in general. Fiscal incentives however had a profound selective effect which in hindsight might have been more strategically guided (R19, R12).

In the final decades of the century the interaction between natural market attractors and the push of incentives provided a formidable challenge for the imaginative risks of developers, landowners and planners. How all of these forces would interact within the microcosm of the block is now explored in chapter eight.
Chapter 8

Outline of modern block metamorphosis as established from cartographic scrutiny and field evidence

8.01.00 Introduction

8.01.01 Field and desk evidence

All sixty-six towns identified in the selection list, as detailed in chapter 3 (Table 307, Rank D), were at this stage visited and observed. A survey of each town was made, recording, to whatever extent it exists, the distribution and context of a range of specific elements which signal the process searched. In this, attention was focussed on the location of commercial elements common to numbers of towns, which were seen to have an influence on responsive change in block structure. The location of these and the relationship which they have to the surrounding land use and urban structure was recorded. Fig 8002 illustrates a typical survey sheet for Castlebar, Co.Mayo.

8002 Castlebar; Typical survey sheet (using OSI 2011 map)
The principal convenience retail stores are plotted. Tesco tends to be the main convenience store in larger towns. The location of Dunnes Stores; a convenience and comparison competitor to Tesco, is plotted. The location of Supervalu, Centra, Lidl and Aldi; smaller comparison equivalents which almost all towns have, are also significant and are plotted. The record includes the location of car parks, as these are assumed to be the major generators of the progression under scrutiny. It also includes the location of all pedestrian link routes through the urban fabric. From this record, a town-by-town description of these elements and their relationships is listed in Appendix 3 in the form of a gazetteer.

The six chosen cases of Rank A (Table 3007) are examined in greater detail in order to locate the stage-by-stage sequence of the process under scrutiny. These six towns, together with their maps, are compared, until a number of common process stages are recognisable. The stages are then laid out in the sequence of their happening, the sequence being adjusted or tuned by subsequent observations and cross-comparison, using the full sixty-six towns of Rank D as resource until one can establish as closely as is possible the reliability of a chronology (As described in chap 3; 03.02.02).

Observation must be systematically measurable but also sufficiently open to recognise the variety of forms in which the phenomenon may be recognised. As already suggested the towns of the sample have many overall forms and in their reaction to change contain many versions of, and parts of, the process as sought.

Following the examination of sixty-six towns, a chronological framework is laid out in this chapter. An understanding of the detail of this framework is subsequently expanded in Chapter 10 as the phenomenon is interrogated in selected blocks of the towns of Rank A.

8. 02. 00 Beginnings of Change

8. 02. 01 Identification of the primary process

While outlining all stages of the process in chronological order, an attempt is made to consider each stage individually, together with the passage from each stage to the next as a route of influence. Findings suggest the existence of 30 identifiable stages in this process. These are laid out in Table 8156 (p 281) in chronological sequence and grouped by colour according to stage clusters, as suggested in the discussion which now follows.
8. 02. 02 Baseline circumstance of typical plots

The recorded measurement of physical urban form is regarded as important towards the use of this evidence for later comparative research. As the process is outlined, a record is therefore laid down in generic diagrams, outlining typical measurements of form and space which describe the physical detail of key stages in the process.

In order to record a commencement stage in the overall morphogenesis, the year 1800 is taken as a temporal benchmark and the process begins with the typical plot in its original state as baseline, identified as Stage 1. This is a single plot, having a building to the front with retail use on ground floor and residence above. An archway at one end of the front façade provides vehicular entrance to a service yard and outbuildings at the back, beyond which the plot is occupied by gardens for the upper-floor residence. (figs 8040, 8041) The typical rear boundary abuts other private plots or the countryside, and may originally have abutted a town wall.

8040  A typical line of burgage plots; Castleblayney 1911 (OSI)

8041  A typical line of burgage plots, abstracted orthogonally (alternate plots coloured)
In order to set up a representation of this critical first stage in diagram form, a sample of typical original plot structure is measured, using the 1911 maps of Longford (fig 8044) and Clonmel (fig 8046). Measurement of the east and west sides of the main street in Longford gives a total of 67 plot frontages, eliminating two incidental non-typical buildings; the courthouse and a large hotel. From 67 plots, the average plot frontage width is 8.1m on the west side of the street and 8.2m on the east side. The average depth of the building occupying the frontage of each plot is 8.0m, on both sides of the street. This frontage building, generally of three storeys, with its roof pitched parallel to the street, is frequently joined by an extension of the same height running backwards perpendicular to it. This, defining the depth of the total streetward building mass, gives an average total depth of 20.5m on the west side and 21.4m on the east side. At ground floor level, and sometimes for two floors, accommodation is then generally extended backwards along one side of the plot in a further return building. To the end of this, the final street-to-back dimension through the contiguous buildings on the plot gives a total of 29.9m on the west side and 31.2m on the east side. These measurements do not include the variety of buildings which occupy other parts of plots in a non-contiguous disposition. An aerial view of the area of study is shown in fig 8045.
8045 Longford 1951; looking north-eastwards, case study block central with main street on left (Campbell Morgan Collection, National Library of Ireland)

8046 Clonmel Main Street Plots 1911 (OSI)

Moving to a second town, Clonmel, the main street here (O’Connell Street) is selected (fig 8046). The north and south sides of this street give a total of 71 plot frontages, similar in sample to that of Longford. Average plot frontage on the north side is 7.8m with 7.3m on the south side. Here the average depth of frontal buildings is 8.5m over both sides of the street. Unlike Longford, there is little extended depth on the frontal buildings above ground floor
level. It should be noted from this circumstance that regional differences do occur. The final
dimension through contiguous buildings on the plot is 18.8m on the north side and 21.2m on
the south side. A noticeable number of plots in this part of Clonmel have 100% site
coverage. Average archway width in both towns is 2.8m. (from a sample of 36). An aerial
view of the Clonmel area of study is shown in fig. 8047

8047 Clonmel 1952: looking south-westwards, case study block central, with O’Connell
Street to left (Campbell Morgan collection National Library of Ireland)

A diagram is now set up showing these typical dimensions. From a survey of typical total plot
depths in the main streets of six towns, an average total dimension of 70m may be struck
which, when applied to the diagram, gives the ultimate typical block. Figure 8048 represents
dimensionally therefore the typical plot in its original form.

8048 Common plot group condition
8. 02. 03 Initial generators of change before 1930

The original burgage plot had particular characteristics of plot organisation, which changed little over a long period of time from the formation of most towns. An examination of Ordnance Survey maps from a segment of any of the sample towns (fig 8052) will show, between the maps of 1836, 1911 and 1951, very little alteration of plot structure, within the consistent 7-8m wide plots, which one may assume to be the burgage plots of the town as originally laid out in the thirteenth century or thereafter.

8052 Map sequence for Clonmel (OSI) (four maps above)

From the mid-nineteenth century, some minor patterns of change are observable which may be attributed to increased demand for floorspace in some forms of trading. Two or three
plots can be seen to amalgamate to form a larger plot for such emerging uses as banks, hotels or, in larger towns, emerging department stores or retail types requiring a larger floor area. (Longford, Sligo, Roscrea, Dundalk, Monaghan, Wexford.).

8053 Bank Clonakilty 1911 (OSI)

This stage (Stage 2) is one of site assembly (fig 8053). However, although the scale of activity on the plot may change, the distribution within the operation of the broadened plot does not. While frontage to the street may increase, all elements within the plot remain in their original positions relative to each other. The retail store still retains access, by horse drawn vehicles, through an opening in the façade, from the street to a service yard immediately behind. In the bank, the manager and his family live on the upper floors with their, now slightly wider, garden at the back of the plot (fig 8053). A typical Sligo street of 1912 is shown in fig.8060.

8060 Sligo; O’Connell Street 1912 (Lawrence Collection)
Even with the rise in use of the private car in the first half of the twentieth century, no major structural change appears to take place initially. The activity of the street and the behaviour of its users may be confirmed from photographs. Figure 8061 shows the main street of Roscrea, in 1952. Cars simply park by the kerb, like the horse drawn vehicles which they have replaced. Individual private cars of residents such as that of the bank manager do the same, but sometimes enter the plot through the archway and park in the yard space behind. The early scale of car use allowed this transition to work without major congestion. The position originally allocated for the cart or coach within the plot was now simply taken by the similarly sized car (fig 8062).

8061  Roscrea  Main Street  1952  (Roscrea through the ages)

In addition to site assembly within the plot structure, two other developments should be recorded as belonging to this period. The first of these is the system of shared back access
laneways (Stage 3) described in chapter 5. Although many such access frameworks had existed much earlier, their accelerated development in the late nineteenth century (5.05.02) represented a significant phase in the service of the typical plot. Dimensionally this was accessible in the twentieth century by motorised vehicles, encouraging its expansion.

The second development is the emergence of the internal shopping arcade (Stage 4), fashionable in the early twentieth century. Although this is not prominent in the critical path of change which affects the block core, its form does relate to some of the influences on later parts of the process. There are several prominent examples in Ireland (Cork, Waterford, Dublin).

8. 03. 00 Change in Urban Land Use Demand

8. 03. 01 Residential diffusion in the twentieth century and redundant backlands

Availability of the motor car with a rise in prosperity led to an increase in outward migration of residence from small towns to their rural hinterland from the nineteen sixties onwards. This process could be referred to as residential diffusion, a scattering of urban-generated residence into the surrounding environs, a process generated by ease of mobility and the amenity of living in the countryside. Unlike that in other European countries, planning control of this phenomenon in Ireland was particularly lenient (R07).

There is a school of thought in recent literature which suggests that Irish society was originally rural and as soon as it was freed, by the car, of the urban imperative, it sought a rural idyll (Connolly 2004). It could however be argued that such an idyll exists in most societies but is accepted as unsustainable. In Germany and The Netherlands it is represented in planned moderation by a migration of residence from towns to smaller villages (Doevendans, Luiten, Rutgers, 1996). In Ireland however, the process of diffusion had a significant impact on towns. Two effects in particular relate to the organisational structure of the urban block.

First of all, residence virtually disappeared from the upper floors of typical trading plots within a fifteen year intercensal period from 1966 to 1981 (fig 8070; 1) (Stage 5) (Dundalk, Wexford, Galway, Longford, Clonmel, Tralee). With it went a number of functions by which the residence had been served by the plot, such as that of the back garden. Maps from the 1930 series show that the rear of almost every plot is occupied by a domestic garden (fig
With the shop-owner and the owners family no longer living over the shop, most such gardens have become redundant by the 1979 map series.

8064 Roscommon; Map of 1911 (OSI) showing intensity of back gardens
Garden shown in green was the only remaining garden in 1992 (Roscommon County Council designated area survey)

To a lesser extent, but also led by response to vehicular accessibility, small urban industries are seen at this time to move from central plots to edge-of-town sites, generating further mid-block redundant land. In the case of two sample blocks, a stonemason’s yard, a fuel merchant’s store and a saw-mill are three land uses which moved outwards (chapter 10). By whichever reason, retailers addressing the street found that they had surplus or redundant land in significant quantities to the rear of plots, or towards the centre of blocks.
8.03.02 Re-allocation of land in block core

Here the second effect of emerging urban diffusion becomes significant in the form of a demand for car parking. With urban-generated residents now living out of walking distance, use of the car becomes necessary for every service visit to the town (fig 8070; 2). In the nineteen sixties and seventies therefore the demand for car parking spaces increases in the town, exceeding the supply originally satisfied by on-street parking (R19).

In reaction, retail plots respond by developing their now-redundant rear plots for customer parking (Stage 6). In this way the full plot is used to support its frontal business (Longford, Waterford, Mallow, Roscrea, Dundalk, Sligo). Initially a back door entrance was common from the car park to the shop (Stage 7) apparently induced by the shopkeeper’s concern for the insurance coverage of car-owner customers who had begun to share with cars the narrow archway to the street (R14).

8.03.03 Co-operating systems between plots

Examining the size and shape of the typical plot, in the context of the options for car parking layout, one finds that, when entered from one end through an arch from the street, any typical plot layout would lose a considerable amount of space to circulation. If standard car parking circulation dimensions (AJ 1970 p57) are tested within the dimensions of a typical plot, the results are interesting (fig 8072). Since parking must be ideally perpendicular to circulation in order to exit in the same direction as entry, the length of a regulation car parking space at 5.5m, added to the required circulation space of 6.1m, describes a cross-site dimension of 11.6m. This dimension exceeds the width of a plot, or the space available by 45%. One can assume therefore that such arrangement was seldom achieved on normal plots and that vehicles instead parked in a linear form on one side only, requiring excessively inefficient circulation space (as shown on plot A). In some aerial photographs from the nineteen-seventies this is commonly discernible.

When just two typical plots are combined however, efficiency of space use increases significantly (plots B and C). The cross section of perpendicular parking, with shared central circulation space, describes a dimension of 17.1m, (brown in fig.8072) which would exceed the cross section of two plots by just 6.8%. However, using the minimum dimensions often applied for internal car parks (AJ 1970 P56), the cross section of this parking arrangement fits within the plots with 1.8m to spare (orange in 8072).
Inevitably such plot-combination efficiencies were realised, and one finds within a short period a process of plot assembly taking hold. In the combination of two plots over one, there were of course other benefits beyond those of circulation. Fewer access archways from the street were now needed, allowing the valuable frontage space of others to be incorporated into retail floorspace.

While the increased feasibility of two sites over one is significant, there is a drop in efficiency by the addition of a third plot due to organisational requirements in the proportion of access space to parking space. The addition of a fourth plot however returns the combination to high efficiency. In addition, the ground area of four plots, or more, crosses a threshold into many alternative options in layout, from which even greater flexibilities begin to open.

Diagram 8073 shows common block-edge adjustments.
Invariably, over time therefore the redundant backlands of plots merge towards the co-operative arrangement of more efficient parking layouts (Stage 8). In doing so, they reduce waste space in the core while enhancing the use of extra floor space at the streetward frontage. Scale efficiencies increase as more and more sites merge, and block cores aspire towards a central car parking facility, with an obvious customer support to surrounding streets (R15, R27). Two aerial images of Cashel from this stage (figs 8076 and 8077) show a growing central space beginning to chop pieces from surrounding plots.

8076  Cashel 1957 (Campbell Morgan Collection NLI)

8077  Cashel 1969 (St Joseph Collection, Cambridge)

In this early-morning photograph the first parked cars can be seen in bottom right.
The overall size and shape of the block and its available core will also of course have an effect on the efficiency of the car park, for similar reasons, at a larger scale, to those of the individual plot. Access to the block from the broader town’s circulation system will also be a factor in the development of its popularity.

In many cases the municipal authority at this stage enters the arena, developing the core as a public car park, helping to acquire residual sites towards maximum efficiency with a new layout of the facility according to regulated standards (Stage 9) (Castlebar, Longford, Clonmel, Dungarvan, Dundalk, Roscrea, Birr, Sligo). Here the municipal authority frequently acquires and develops a street entrance linking the car park with a surrounding street or streets, (Stage 10) eliminating informal entry and exit points in favour of a safely regulated access route (Castleblayney, Roscrea, Charleville, Dundalk, Longford:fig1009, Roscommon:fig1012, Sligo:fig1018). The authority’s justification for intervention is led (R13) by the perception that retail activity in the area is enhanced by the support of car parking provision. The intervening works are generally linked to contributions in the planning permits of surrounding plots.

By 1983 Stages 9 or 10 had been reached in 58 of the 66 towns under study (R19) (Development Plans). In essence, retail plots on the edge or perimeter of the block continued to address the street, in segments of the town which now had enhanced customer access due to the existence of an adjacent car park (R19,R11).

8.03.04 Plot-tail severance

From some of the earliest examples of the process to this stage it is clear that plot assembly for car parking did not always incorporate the total available area of each of the plots assembled. One plot owner would frequently gather or purchase the rear portion of an adjacent plot. The adjacent owner would jettison this portion, obviously for a price, while maintaining the front portion for a street-fronting business. A line of severance would be selected. In morphological terms the process is referred to as plot truncation.

Looking a little more deeply at this selection, of the particular part of the plot which might be regarded as surplus, the line of severance is of interest. Figures 8078 and 8079 show such a line north of Abbey Street in Ennis. Sometimes a natural line might suggest itself, being there from a previous subdivision in the organisation of the plot. By comparing maps of the present with earlier maps one can however search for lines of severance which had no
earlier function or were not there before, concluding that their selection was led by a modern decision, led by an understanding, or judgement, of the most efficient boundary position serving both sides.

With a focus on these lines in particular, measurement patterns are taken from a number of plots of the distance between the streetward boundary of the plot and the new boundary which separates the retained rear of the plot from the space allocated to car parking beyond. Within a sample of eighteen towns, fifty-one such severance instances are found and measured, giving a pattern of broadly similar dimensions from which the average dimension is calculated as 46.2m. This is placed on the generic diagram. In the Ennis example, chosen to illustrate the condition, the dimension is considerably short of average, at 27m.

In response to a question asking if a planner might control the amount of site normally left to support the streetward business in such a situation, a the interviewee (R11) suggested that
the judgement or decision would seldom arise, as the site would generally be already assembled when first presented under a proposal to the planner. One can therefore assume that the division line is set by the seller in accordance with at best the amount of land needed to maintain existing business, or at worst the amount of funds which the seller needed in his or her local circumstance. In cases where the municipal authority is involved as purchaser however, the authority’s responsibility as custodian of the common good does not appear to be an issue.

8. 04. 00 The Core-to-Street Access Route

8. 04. 01 Retail exposure and frontage profile

Once the block core car-park becomes established the process of its relationship to the street begins to develop. The route from the core to surrounding streets, and consequently to shops, being now a generator of significant pedestrian activity, becomes a potentially attractive trading frontage. Harnessing of this frontage by retail uses begins. Since visitors to the town now arrive in the car park, commencing their pedestrian journey there, rather than as previously in the street, the retailer will attempt to confront them at the earliest opportunity before they reach other competing retailers in the street.

There is obviously a potential frontage profile to be gained by shops immediately flanking an existing laneway-link route, by opening frontage sideways to the laneway (Stage 11). This circumstance however is not without its restrictions. A number of interviewees (R08,R14, R16), some of them shop owners, cited some common deterrents. One related to the internal organisation of the typical shop. Where this was still operating on a typical 8m wide plot, the opening of entry to the side tended to increase the internal circulation space disproportionately against the space left for display, with added security problems. A structural problem was also common where the opening of even a display window to the side was particularly expensive because of the fact that, in a traditionally-constructed building, this would penetrate the essential gable wall, which generally extended, as previously recorded, for a depth of 20.5m along the laneway.

However, the eventual response to the laneway does develop, through the opening of display windows, whatever the cost (Donegal, Foxford, Cavan, Charleville, Kilkenny, Ballina, Swords). Frontage to the laneway addresses all users entering the street whereas frontage to the street catches only those who select one direction (R28).
Plot owners adjacent to a laneway will also make extended use of the depth of the plot, building to the rear with frontage to the laneway, in some cases leasing or selling segments of the rear of the plot to smaller retailers who subsequently develop frontage to the laneway (Bray, Killarney) (R08, R22) (fig. 8082).

If the number of cars accommodated by the car park is modest, the pedestrian footfall which it generates will not be significant enough to induce retail frontage, but if this is large, or increases, it can generate a competition among link routes (R04, R11, R29). Because such routes strengthen footfall through adjacent parts of the street system, plot owners will support route desire lines close to their part of the street. However as more options appear for the pedestrian, footfall will of course potentially decrease on each route.

All of these are situations which react within an existing circumstance. From this emerges the forward design of such situations. In time the entrepreneur identifies ideal desire lines between car park and shopping street, invests in a plot or combination of plots in the block crust and creates a shopping passage from car park to street, with dedicated retail units (Stage 12) (fig. 8082).

8. 04. 02 The shopping passage

As shopping passages or arcades develop, a number of common patterns become obvious. In the most direct reactive provision, a plot owner on a single standard plot, with frontage to street and back to car park, may re-organise the plot as a pedestrian route addressed by a number of small retail units. Within the limitations of a typical plot cross-section however the route width tends to be of tight dimension and the shop units of limited depth. In some cases
therefore a developer may acquire more than one site in order to create units of more acceptable depth to trade with attractive uses on to the passage (R03,R30,R12). A development of two plots is common, but even at this typical cross dimension, depth is still limiting and as a result, shops trading on to such passages tend to be of limited capacity.(Mallow,Naas,Dungarvan)

Eighteen shopping passages were measured from sample towns. The average width, or frontage take, of these was found to be 15.2m., which may be assumed to be of two-plot take based on the typical plot width (2x8m). With this information, the typical rectangle represented by the first generation shopping passage may be added to the generic diagram. Having the measurement of residual site depth as 40.2m from above, and a double site width of 15.2m, a rectangle of 15.2m by 40.2m results. Looking at subdivisions within this one finds from the sample that the typical public passage width between shop units is 3m. This dimension increases to an average of 5m when one adds to the samples the more recent passages which tend not to be restricted to the width of two plots. A diagram is constructed (fig 8082) describing typical layouts of the early shopping passage. It shows typical shop unit subdivision combinations of 6m to 8m. Frequently shops at both ends are larger, but not by a consistent proportion.

It is now established (Hillier Parker, 1997)(Convery, 1999) that a typical visit to the town consists of a visit first to the convenience store frequently followed by a visit or visits to a number of smaller specialist shops. Goods purchased from the convenience store are commonly transferred from a shopping trolley to the car boot in order to leave a free hand for the other visits. In response to this composite demand, the ideal shopping passage, through the block edge, soon develops into a combination passage of small convenience units, such as pharmacy or newsagent, with a supermarket as anchor store at the car park end (Stage 13)(R01), the streetward end then giving immediate access to other shops. This combination cluster in such disposition was set to become popular at a range of scales (Ashbourne, Dundalk, Roscommon, Killarney, Gorey, Mullingar, Roscrea).

To illustrate the form of this stage, a diagram is constructed representing a typical shopping passage with anchor store. For this the typical Supervalu version of the anchor unit is taken. A sample of fourteen such units is then taken from the overall sample of towns in order to calculate three critical dimensions; firstly the setback distance of the streetward face of the anchor store at its boundary with the rear of plots which remain between it and the street, secondly the distance between the car park face of the anchor store and the street, and thirdly the area of the anchor store. The anchor store may then be positioned within a typical
layout condition. Two methods are used to do this, as the diagram shows, (covering two typical situations) (insert) which have been observed as common (fig 8082)(8083).

8083 Alternative Common Layout for 13

In the overall process a small number of what might be termed cul-de-sac shopping passages have been noticed. These are sufficiently common to represent a distinct stage and must be recorded. When the shopping passage began to succeed, particularly with its anchor store, many entrepreneurs, impressed by its activity, sought to replicate it but on plots without necessarily any pedestrian links through to a core car park. Dead-end shopping passages were thus created (Stage 14) (Mallow, Castleisland, Naas). One could refer to these as blind shopping passages, since they have no through destination although some of them do have a medium-range anchor at the terminal end. Such passages are obviously inspired by stage 13 but do not appear to induce further stages. They have a poor success rate (R16).

8. 04. 03 Twenty-four hour routes

Out of a sample of eighteen through shopping passages, fifteen, all under private management, are found to close at night, thus removing the route from the public access framework. This can be a significant obstacle, particularly in towns where the passages have developed on significant desire lines between the town’s street activities. Using the principle of the 1748 map of Rome by Nolli, which identifies the domain of public access within the urban fabric, fig. 8116 shows how this access framework changes around a typical street-to-block interface in Sligo, over a 24 hour period. It is out of the negative perception of
this that the purpose-built outdoor shopping passage, or the dedicated public pedestrian street, develops, linking the car park to the existing street (Stage 15)(Westport, Clonmel, Longford, Kilkenny, Roscommon) This has positive characteristics, of 24 hour access to both shop owners and customers, albeit with a loss of weather protection.

8116 Typical daytime expansion of street realm in O'Connell Street

One can identify the typical characteristics of an outdoor passage, using a sample of five such passages from the sample towns. Here the average overall width of the passage and its units is 27.6m, with an average passage width of 6.4m. The backs of the units do not always run to the full boundaries of the site. In most cases however, such as in Roscommon or Longford, there is little room for a service zone, merely a single-person corridor for fire escape. This presumably reflects the fact that rear service access is an unlikely requirement for the uses which occupy such units (R11,R22). Figure 8119 shows a number of the identified stages of block edge passages, indoor and outdoor, in Clonmel.
8.05.00 Block Core Frontage

8.05.01 Double-fronted block edge

A further reaction is observable among plot-owners who find their retail unit abutting the street on one side and the block-core car-park on the other. This induces a tendency to open two frontages from the shop; one to the street and the other to the block core (Stage16) (Dungarvan, Clonmel, Ballina, Sligo). The advantage is that the shop is now availing of its own through passage to entice users through its internal presentation, capitalising on its position on a natural desire line through the block edge. Reference to units of this type by a number of interviewees suggested that it is not a structure favoured by smaller shop-owners as the security factors associated with multiple entrances required the employment of larger numbers of staff, which did not always accord with scale of trade (R20,R23,R26,R28). Distance between the two facades is also a factor which determines the feasibility of this option. In Dungarvan the Elverys store attempts an 85m long shop, one plot wide, in a deep block perimeter. In Ballina, where an Eason bookshop runs between facades on both ends, the depth of block edge is ideal, at 56m (figs. 8125, 8126). Dunnes Stores in Navan has a
long narrow shop adjacent to a laneway which for security control does not open to the lane, opening instead on both ends.

8125  Ballina;  North-east edge of case study block 2011 (OSI)

When shopfronts begin to open on the block core side of plots, municipal authorities appear generally to react in their support by the provision of footpath and lighting to this edge of the
core space. (Stage17). This is frequently funded by the plot owner in return for planning permission for the opening (R27, R30). This initiative by the authority is significant in principle, supporting back-of-pavement shopfronts to acknowledge the space as part of the street system, perceived as a square, (Ballina, Clonmel, Sligo, Longford, Roscommon, Donegal, Killorglin, Enniscorthy, Nenagh, Wexford, Ennis, Naas.) The street has now followed the car park into the block core. This perhaps, rightly or wrongly, crosses a distinct threshold on the recognition of the core space as part of the town’s public domain.

8.05.02 Core frontage preference and block inversion

The next stage is one where the process crosses a significant threshold in the operational structure of the block. This occurs when a retail unit with frontage to both the street and the core develops its primary frontage to the car park, with secondary frontage to the street. (Stage18) (Castlerea, New Ross, Castlebar). This may be observed in a supermarket for example where checkouts and main entrance occur at the car park end, with a minor entrance at the street end. The initial reaction by planning authorities to this stage was one of strong opposition (Castlebar), but following a number of appeal cases (R01), authorities appear to have been forced to yield (or in some cases happy to yield ). With this stage in the process, the dominant inward-focussing of trade, with its back to the street, begins.

The next stage occurs when a trader, perceiving the car park as more active than the street, and wishing to trade to the car park alone, purchases the block core end of a plot, constructs a retail unit and opens frontage only to the car park. This retailer has no frontage to the street and no option to have frontage to the street. (Stage19) (Newbridge, Navan, Sligo, Ballina, Dungarvan, Naas, Ashbourne). In this stage of the process a separate façade of shops develops, not associated with the street, and now dependent on the sustained activity of the car park. Here also the block edge is becoming a block in its own right, with separate units having outward facades on all sides. Sub blocks develop within the edge of the original block.

The end state in this phase of the progression is when a plot owner whose plot bounds the street on one end and the car park on the other, and having the option to open to either, opens a frontage to the car park only, with no entry whatsoever from the street (Stage 20) although in some cases a display window will be retained at the street end as a planning requirement. What is reached at this stage is the suppression of the street façade in favour of the core façade. This can also be traced in higher rent yields on the core side as the
framework develops indicating (R14), in the commercial contest between street and block core, a preference for the core (Castlebar, Castlerea, Carlow, Clonmel). In one sample town (Mallow), the street shows signs, in the layout of a recent development proposal, of becoming a service access route to the proposed ‘back’ of a core-facing convenience store.

The last three stages in the process above are significant because they share a common principle of addressing the block core as primary urban space, while relegating the street to the function of secondary service access, thus reversing within the block the organisational structure of plots which had been consistent for nine hundred years. Here the relationship between street and block core changes in structure. A stage has been reached in which the principal constituents of the block have assumed new positions. A state of block inversion has been reached.

8. 06. 00 Street and Block Core in Competition

8. 06. 01 Street and block in new relationship

A distinct crossing point is reached in the process at this stage (stage20). Not all towns cross the stage but those which do enter a structure in which block and street begin to react to each other with a new relationship, which tends not to be to the advantage of the street. Some towns select, through subsequent stages, a different direction to that of others. The direction relates to such factors as town size, the position of an inverted block relative to the town’s layout structure and the opportunities or limitations of the immediate context around block cores under change. However, because the objectives of the process, being the attempts to bring the car as close as possible to the retail interface, continue to remain similar, whatever the path, the direction of each path may still be observed as consistent with a singular identifiable phenomenon.

Some towns recognise aspects of inversion as negative, while others view it as positively opening new directions in the development of urban space. Where an inverted block is surrounded by established urban form, inversion tends to induce development limitations (8.07.01) (Clonmel, Sligo, Tullamore), whereas if the block is on the edge-of-centre, with unrestricted options on its out-of-town side, limitations may be less conspicuous in the short term (Castlebar, Letterkenny), but may eventually develop with a longer period of effect (8.06.04). While the former relate to congestion of urban form, the latter relate to its diffusion. Both might perhaps be regarded as negative.
8. 06. 02 Core-to-core connection

Where inversion becomes clearly established, a further route of stages does tend to continue from that point as reaction to the circumstance. One such stage is the tendency for the inverted cores of adjacent blocks to seek connection with each other.

Where a linear street connects two street junctions, land values will traditionally be high close to the junctions where site profile and pedestrian footfall will both be greater. However land values can also be high at the mid-point of the street for different reasons. Here plot depths can be greater and less restricted in comparison with often shallower depth at the corners. A balance of benefits can thus occur, serving different retail types on different plots.

In the new domain of inverted blocks, where two blocks sit side by side separated by a street, the cores of such blocks are tending to seek linkage (fig. 8129) at mid-point in the street length as it is here that core-to-core desire lines are strongest. Pedestrian links between the street and its adjacent blocks are tending to occur opposite each other (Stage 21) (Castlebar, Sligo). This linkage location can take the street out of the circulation framework. A staggered meeting line would incorporate at least some part of the street.

8129 Castlebar; Slip routes developing (yellow) to link block core A to B 2011(OSI)
8. 06. 03 Landlocking

Another consequence of the emerging priority of the core façade emerges where site assembly for further development is focussed on the core frontage in preference to the street frontage. Here a façade of fewer broader land uses tends to emerge on the core, while plots maintain their original width on the street (Stage 22) (Ballina, Carlow, Sligo). As a result of this, the backward expansion of original plots, which face the street only, is inhibited, and land-locking takes place. It has been suggested that this reduces the potential vibrancy of the street in favour of the core space. Research has not yet definitively proven this. Krier (1984 p43) does argue that greater variety of frontage is, beyond other factors, the creator of street vibrancy.

In a typical case in Sligo a number of plots to O’Connell Street are landlocked, following cross-plot expansion behind, on a street which might have a high demand for increased scale in its floorspace but also a high demand for transect connection. Along one section of this frontage the backward expansion of twelve plots is occupied, beyond 15m, by just three, all of which have total site coverage (fig. 8144). On the east edge of this block the number of frontages in 2011, at 21, is only marginally less than those in 1911, even though the internal retail floor area accessed from the street edge is seventeen times that of 1911. If one takes this as an emerging model, it will of course result in the presentation of a smaller number of wider facades to the core car park than to the street (Chapter 9; 09.04.04).

8144 Sligo; East edge of case study block 1911 (OSI), and covered retail floorspace 2011
8.06.04 The fringe block

If a block or un-closed block occurs on the fringe of a town, or on the fringe of a town centre, and its outer half had not previously been part of the town’s commercial plot structure, the process as described up to now often leads to a circumstance where the outer side of the block typically closes with an urban fabric different to that on the town side, both addressing the block core. A new high-density residential edge form has been common, addressing the core as transitional edge-of-centre space (Stage 23) (Tullamore, Castlebar, Nenagh) (fig. 8148, ground plan A, section B), made up of three or four-storey apartment buildings having marginal retail uses on ground floor. It could be suggested that this assembly acknowledges the core car park as a street-related transitional space, between commercial core and residential edge.

8148 Typical cross-block arrangements
The shopping mall leading from street to car park which is then surrounded by residential apartments, appears to be emerging as a common development package (Tullamore, Letterkenny), sometimes at the suggestion of the planning authority (R07), representing perhaps a further recognition of the car park space as an urban street frontage, or square. In some cases this arrangement leads, with greater design control, to a developed version of similar layout (fig. 8148, section C). In its completion of an edge-of-centre layout structure, it does perhaps compromise further flexibility, though this may be reversible.

A similar version of this stage, in a much exploded form of very different scale, now emerges as particularly common. In such version the core car park expands to become a circulation space closed on its outer side by large free-standing buildings in an office-park format (Stage 24) (fig. 8149, section F). Here the apartment blocks of stage 23 continue in the same format but are joined by such elements as, from case study examples, the large convenience store now in control of its own ground, a free standing Multiplex cinema, public library, local government offices, McDonalds drive-thru, retail warehouses, Aldi / Lidl and many such free-stand-seeking edge uses (Castlebar, Letterkenny, Wexford, Dundalk, Nenagh,). These occupy building forms which are unconnected to the street and unconnected to each other, but purely fed by large car parking space. The car park now becomes the established point of arrival, serving on one side the back of the streetward buildings in the town and, on its opposite side, the frontages of free-standing buildings set back from its edge. This is a suburban layout defined by car movement. An earlier form of block-core layout in the Longford case study area which includes a free-standing public library and semi-state offices (described in chapter 10, fig.1081) might be seen as a reference which anticipates this layout concept.
8. 07. 00 Expansion Thresholds

8. 07. 01 Core saturation

If the urban block is not on the edge of centre, but is instead surrounded by, and absorbed within, the established fabric of the town, the post-inversion progression may take a particular direction determined more by limitation than opportunity. In the most common pattern, the next such stage is where saturation of the inverted structure occurs, beginning to point to threshold limitations in the process. Three towns in particular have crossed a threshold in this direction. (Clonmel, Tullamore, Sligo)

As with any urban square, if trade increases and retail profile is initially strengthened around its perimeter, activity will increase in the space itself. In the case of blocks in our sample, traffic, or parking demand, increases, but being physically limited, reaches saturation. The central space thus represents the commercial form of a cul-de-sac. Unlike a linear street space, the core surface car park has finite edges. These edges may now be rigidly defined by trading frontages established in stages 18, 19 and 20 above. Eventually this space reaches capacity.

The effect on the core becomes obvious in a sequence of stages. Once the saturation threshold is crossed, parking spaces become conspicuously less available, first at peak trading times and then throughout the day. As soon as this occurs, the car park frequently ceases to provide the anticipation of available space for the user. As a result it soon ceases to be an attractor to the block. The surrounding activity, which it initially generated, is now under threat by its limited capacity. As a result growth and investment begins to reach a plateau.
8.07.02 Reduced activity due to saturation

In the post-saturation circumstance a number of retreating stages can be identified where some elements of the process, which have the option, begin to reverse. In block cores which have experienced reduced activity, frontages to the core begin to close down. (Stage 25) (Tullamore, Clane, Killarney) In cases where this frontage belonged to a retail unit which also had frontage to the street at its other end, the consequences may be minor and display almost as a positive feature the capability of the plot to adjust flexibly to trade at both ends. In some observed cases however, units without this option but with frontage to car park only, have closed. (Clonmel, Tullamore Clane)

Another reverse activity is the incorporation of a failed shopping passage into a single street-facing unit (Stage 26). Although such an operation may be contractually difficult with leasehold tenants, it is physically straightforward. In a morphological context, it is not unrelated to the conversion of recent subdivisions back to an earlier single plot. The Winthrop arcade in Cork (albeit linking two streets rather than street to core), in a one-plot-wide route of small shop outlets (Stage 4), attempted in 2009 to recede with a proposed conversion to two single outlets, each facing one of its street frontages. However, it was judged by the planning authority to have, in its style and form, acquired heritage value, and permission to convert was refused.

8.07.03 Spatial pricing incentives

For a time the value of the car park can be strengthened in a pricing structure which favours the most efficient users. This can be tailored to short-term users, thereby maintaining increased activity in support of the immediate surroundings. Studies have concluded that the retail trading environment of a town centre should be supported by a parking facility which has clear pricing advantage over competing centres. In this the charging structure requires short-to-medium stay parking which is cheap, free or linked to retail purchase, matched by a more expensive long-stay charge. The recommended collection method for this process implies controlled entry and exit rather than display of payment, with collection at the end of a flexible period. (Findlay and Sparks, 2009 p9, Portas, 2011 p27). It should also be matched by a corresponding charge in the car parks of out-of-town centres. (RGDATA, 2012 p11)

Research shows that the selection of appropriate car parking charges is a delicate art which, when appropriately balanced can have a significant impact on user perception. The
introduction of more attractive car park pricing in the town of Swindon, UK, was sufficient to induce a clear increase of rental interest in retail units in the vicinity (Portas 2011 p27).

The block core car parks in the towns of Rank A (09.01.01) operate a pay-and-display charging system, with town-centre pricing zoned according to demand. All may be compared to corresponding car parks at more distant locations. In Longford the charge at the centre is 1.00 euro per hour. Parts of an hour may be purchased with a minimum payment of 0.20 euro, and a maximum stay of 2 hours applies. This may be compared to edge-of-centre car parks outside the central zone, such as that at Harbour Rd., 250m to the south east which has a single day rate of 2.00 euro.

In Ballina the block-core car park, also central, has a charge of 0.60 euro per hour, as do the surrounding streets of the central zone. Outer car parks in the edge-of-centre zone and beyond have day rates of 2.00 euro and 1.00 euro respectively. Fractions of hours may be purchased in the central zone, with a maximum stay of 4 hours.

In Sligo the central block-core charge is 1.20 euro per hour, with a maximum stay of 2 hours. A special rate of 0.40 euro applies for short visits of under 30mins. Outside the central zone, edge-of-centre car parks, such as at Lake Isle Road, 400m to the north east, have a single day rate of 3.00 euro. The facility to purchase fractions of the total charge is regarded as an important incentive as is the pay-and-display collection facility (R09).

Although the charge in the Sligo example has been tuned to respond to demand however, the locational value to the user now exceeds the effect of pricing incentives (R09). This must be seen as an established indicator of saturation. Demand exceeds supply and the facility is simply not large enough to provide for anticipation of space on entry, causing the user to seek space elsewhere. This circumstance is now causing reduced retail activity in the block as perceived by traders, and reflected in land values (R14). In Sligo where demand exceeds supply, the block structure has thus reached a self-limiting threshold. The Longford case-study block is approaching a similar saturation stage (R10). In Ballina and Clonmel the car park is still satisfying demand (R04). In the case of Clonmel, supply may have stabilised due to the fact that, following the outward transfer of the principal convenience anchor, the surrounding retail activity has already receded below natural demand (R21). In Roscrea and Roscommon supply still exceeds demand.
8. 08. 00 Reactive Strategies

8. 08. 01 The emergence, by design, of responsive block models

In cases where the process or any of its stages as described above have been observed and identified as of potential negative impact, there have been some responsive attempts by municipal authorities to re-plan the block in order to collect piecemeal objectives into planned form. Some of these address one or two stages in combination, but others consciously or otherwise look deeply enough at the block and its primary activities to have touched on long-term alternatives.

At the stage to which some inverted blocks have progressed however it becomes difficult to adjust the evolved urban structure, particularly if the core-facing backs of plots have established frontage trading rights to a space which is perceived as a public square within the street system, with now-established public rights of way. (R03) In reaction to this circumstance in particular, the municipal authority in Sligo, in co-operation with an appointed developer, has commenced a procedure to buy out all inward-facing uses which have established frontage to the core, under a masterplan which aims to rescue the block. In the case of both Longford and Sligo, the preparation of an overall plan to restructure the block, in reaction to the progression already described, may thus be identified as a stage in the process (Stage 27) (figs. 8150, 8151).

8151 Longford Block Masterplan  (Murray OLaoire 2009)
A common reaction to congestion in a surface car park is of course the provision of a multi-level car park (Stage 28). A number of block cores have either reached the stage of providing this (Ennis, Naas, Newbridge) (fig. 8154, sections D and E) or are in the course of planning it (Clonmel, Longford, Roscrea, Sligo). The associated principles of sustainability which emerge here might be regarded as controversial and will be discussed again in chapter 12.
8. 08. 02  Residence over retail at an increased scale

Almost all of the piecemeal developments in the process of block inversion have been spatially horizontal, while many of the ideas looking at its correction have focussed on sections in the vertical dimension. A particular cross-section of uses has emerged as recognisable among reactive developments, appearing first in Galway in the 1980s with subsequent examples in Athlone, Dublin and Sligo, but with earlier examples throughout Europe (fig. 8155).

8155 Section

In this typical cross section, which assumes total block coverage, a complete retail ground level or ground floor allows the contact line between trader and buyer to return to its original position at street frontages. This retail zone, sometimes incorporating floors above and sometimes below, takes service access from its core or underground core. Above, and separated structurally from this zone, is an upper residential block perimeter, inward-fronting on to a central outdoor deck in the manner of a residential square, with opposite views outward around the block edge giving elevated aspect to the city (stage 29).

Here a total residential block layer sits on top of a separate and flexible retail block layer, with separate access from street level. With a clear horizontal division between them, no connection occurs, yet proximity is achieved.

For a shopping environment, ground floor in contact with street is sought as ideal (R01). A residential environment on the other hand seeks such things as light, air and aspect. The reason to arrange these vertically is led by the fact that the top use is not seen to need a ground floor domain while the bottom use does not need a top. For each level, flexibility is independent, isolating such common needs as the freehold purchase of residence or the frequent re-imaging of a shopping environment (R01, R14). This arrangement might in fact
be seen to represent an up-scaled form of the original house over shop, the plot form now becoming a block form (fig 8155).

The actual vehicular circulation, which had tended to the centre of the inverted block, bringing street activity and contact frontage with it, is instead taken to multi-height or multi-depth, or to a dedicated block in close proximity, out of the retail level (Stage 30).

One could of course apply such vertical layer separations to the developments of stage 23 as described earlier in fig. 8148, by developing out of B, option C, where the parking is taken underground (fig. 8148 C). Many options are facilitated by strategic design control, that which is sought in the re-start solutions of stage 27.

Such reactive solutions may of course lead to other stages as yet un-perceived, but for our current research they represent the most advanced stages visible in real examples. This thesis does not review their merits or disadvantages. They are merely recorded as common or observed. They are listed on table 8156.
**TABLE 8156  LIST OF PRINCIPAL STAGES IN THE PROCESS**

**YEAR 1800 AS BASELINE**

1. Original state, of single (burgage) plot, with building to front having retail on ground floor and residence above. An archway at one end of the façade allows vehicular entrance to a service yard and outbuildings at the back, beyond which the plot is occupied by gardens for the residence above. The rear boundary abuts other private plots or the countryside.

**PRE-TWENTIETH CENTURY DEVELOPMENTS**

2. Site assembly of two or sometimes three plots in order to accommodate a larger scale use such as a bank, hotel or larger retail unit. All original elements of the plot retain the same relationships to each other, at a larger scale.

3. Shared back access laneway serving some or all plots. *(Access to plot through door or gate)*

4. Shopping Arcade through block from street to street using one, or sometimes two, plot widths.

**TWENTIETH CENTURY DEVELOPMENTS**

5. Upper floors become vacant due to migration of family residence to suburb or countryside

6. Surface car park within back of single plot for customer use, with access through archway or external side passage

7. Alternative secondary entrance to rear of retail unit from in-plot car park

8. Individual surface car parks amalgamate; generally two, sometimes three, using existing laneway(s) as pedestrian route to street

9. Municipal authority intervention to introduce public block core surface car park

10. Dedicated public vehicular access route to car park from existing street(s). *(Sometimes in association with a new link road)*

11. Orientation of shop units to address existing pedestrian route between car park and street

12. Indoor shopping passage from car park to street with dedicated units

13. Shopping passage from car park to street indoors or outdoors with dedicated units and anchor unit.

14. Blind shopping passage from street (to terminal unit) without car park connection.
<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>New public pedestrian street linking car park to existing street.</td>
</tr>
<tr>
<td>16</td>
<td>Opening of rear secondary frontage to car park by shop units on street</td>
</tr>
<tr>
<td>17</td>
<td>Footpath and lighting to edge of car park by local authority</td>
</tr>
<tr>
<td>18</td>
<td>Opening of primary retail frontage to car park with secondary frontage to street</td>
</tr>
<tr>
<td>19</td>
<td>Opening of retail frontage to car park only with no frontage to street, by plots which have no option</td>
</tr>
<tr>
<td>20</td>
<td>Opening of frontage to car park only with no frontage to street from plots which have option to both.</td>
</tr>
<tr>
<td>21</td>
<td>Linkage between block cores across the street framework</td>
</tr>
<tr>
<td>22</td>
<td>Expansion of floor space on block core frontage trapping and land-locking plots on the streetward side.</td>
</tr>
<tr>
<td>23</td>
<td>Apartments or residence surrounding and addressing core car park.</td>
</tr>
<tr>
<td>24</td>
<td>Clustering of larger scale retail units, unrelated to streetward plots, on outer non-street sides of car park</td>
</tr>
<tr>
<td>25</td>
<td>Closure of frontages to car park or to any spaces other than to the street</td>
</tr>
<tr>
<td>26</td>
<td>Change of shopping passage and shops back to single retail unit</td>
</tr>
<tr>
<td>27</td>
<td>Recovery of block from car park to intensified street system or alternative layouts</td>
</tr>
<tr>
<td>28</td>
<td>Multi-level or underground car park in block core</td>
</tr>
<tr>
<td>29</td>
<td>Vertical subdivision block models layered to provide composite relationship (Such as deck access or the stacking of residential and commercial space into new vertical relationships)</td>
</tr>
<tr>
<td>30</td>
<td>Raising or lowering of site access structure in the block core (Such as basement service route)</td>
</tr>
</tbody>
</table>

* Colour separations indicate stage clusters
8.09.00 Conclusion

8.09.01 Reflection

The evidence from this research has been laid out in a track of chronological stages but many towns may exhibit only some stages. In any town, the site assembly of two plots into one might be the only block change for a century until, in a second development, the total block becomes a department store. In such case few of the stages traced by this research would be observable. One can be tempted to arrange sequential happenings in a morphological ladder (Unlu 2011) with a focussed progression. There are however many interconnecting progressions, rather than a single ladder on which every rung must be visited.

The representative track followed by this work does however show a clearly embracing pattern, revealing such characteristics as change of scale and the changing relationship between front and back in plot organisation. Within the thirty-stage chronology as suggested there are a number of critical stages at which significant thresholds are crossed in the re-organisation of street and block, and some of these crossings may be irreversible.

The initial stage 2 in the nineteenth century, involving plot assembly for increased scale of use, did not extend its operation beyond the internal constituents of the single plot and therefore did not alter the relationship between plot and town. The role of the plot was retained. Where back lane systems developed as in stage 3, to serve plot groups, they added a service component but did not yet alter the relationship between plot and street. Even the provision of customer parking in the back did not irreversibly alter the individual use of each plot. When two or three plots individually followed this new use, a process began, but since the decision to do so was still internal within each plot, it was reversible.

When plots amalgamate however, and boundaries are removed, as in stage 8, parcels are no longer individually controlled and the process proceeds to something of a different scale. With co-operative systems outside the individual plot, a distinct threshold is crossed. Independence or interdependence of trading environments here becomes public, with both benefits and limitations.

The support for core space by the municipal authority at stage 9, the development of route access to it at stage 10, followed by paving and lighting of the core space at stage 17, brings the core space into the realm of streets, with the establishment of rights of way, crossing a threshold into the permanence of public space.
If, at stage 16, a shop on the block perimeter opens rear entrance frontage on to the car park in reaction to the activity generated by the latter, the process then enters a stage of significant structural change in the organisation of the block, ending the street-supporting orientation of the block edge. In stages 19 and 20 when shopfronts subsequently commit themselves exclusively to the block core, the ultimate rejection of the street is complete, representing the threshold of inversion.

When perimeter buildings become free-standing, in stage 24, with reduced acknowledgement of pedestrian domain, a significant diffusive spread draws the town outwards to a series of different spatial relationships, pulling the components of urban form and space apart, to relate to each other at a very different scale.

Small decisions, unique to the on-site operation of individual plots, may advance and trigger change in the broader operational structure of plots, blocks and their constituent parts towards different layout arrangements. Thresholds are crossed, without awareness, by actions which may then be found to be irreversible. The principles at issue here will be revisited in chapter 14.

The progression traced in the above sequence has been underway since the nineteen-sixties. Stage six occurred in Sligo in 1967, stage nine in 1975. Stage nine occurred in Longford in 1985, and in Roscommon in 1990.

The chain reactive nature of stages should be reaching a point at which it is clearly seen and understood by participants, whether or not that leads to management, or intervention. Since almost all stages of the process represent progressive advancement to its participants, those who enter at a late stage will take advantage of the trial and error of its earlier participants. The natural experience of research by design thus occurs. Many towns leap over stages of failed example elsewhere, using the advantage of later start, although not all avail of such experience, as in the case of stages 14 and 15. The confident entrepreneur’s belief in a slightly different approach and circumstance is often profound.

As with any ecological urban footprint the cause and effect of a phenomenon can be separated by time and process but also by spatial distance. Here the process of residential diffusion starting at stage 5 with the move to urban generated housing in the countryside, has had a significant indirect effect on towns over a fifty-year period, where the effect is probably less reversible than the cause.
Chapter 9

Review of extent and nature of the progression in the layout structure of 66 sample towns

9.01.00 Introduction

All sixty-six towns have been observed in the field. The gazetteer, laid out in appendix 3, describes relevant aspects of their substance, while a chronology of observed stages in the emerging process has been laid out in chapter 8. These sources are now brought together, first into a matrix in which one can see the place of each town in the process, together with the distribution of findings at a broader scale.

9.01.01 Frequency and distribution of findings among towns

Fig 9001 lists sixty-six settlements, ranked by population from top to bottom, with thirty stages of the morphogenic progression as described in chapter 8, numbered in chronological order from left to right. The second-last vertical column lists population, while the final column lists towns which received urban-renewal designation for the availability of tax incentives as described in chapter 7.

Fig 9002 lists the settlements in the order of these designations from the earliest D1 of 1986 (see Chapter 7) down to the latest D4 of 1994, followed by towns which did not receive designation. In each of these groups towns are ranked separately by population.

In both diagrams, columns 1 and 2 are fully occupied as both of these early stages of the process took place in all 66 settlements. In column 2 for example it so happens that all towns of the broader sample show the typical characteristics of at least one instance of two-plot assembly. Although in the diagram these columns therefore give little comparative information, they must be included, as they represent stages in the process, however common such stages might be.
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| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| DUBLIN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1110527 | D3 |
| CORK | 119220 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 90 |
| GALWAY | 71550 | D1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 01 |
| LIMERICK | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 57106 |
| WATERFORD | 45732 | D1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 87 |
| SWORDS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 56924 |
| DUN LAUGHLIN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 27135 |
| DROGHEDA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 02180 |
| NAVAN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 97913 |
| TULUMOORE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 70130 |
| CASTLEBAR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 15582 |
| BALLINA | 10351 | D3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0653 |
| MULLINGAR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 95878 |
| KILKENNY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 94141 |
| MALLO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 87111 |
| NENAGH | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 85786 |
| LONGFORD | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 80220 |
| NEWBRIDGE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 70162 |
| GLEN | 5053 | D4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 6656 |
| MONAGHAN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 66979 |
| BALLYSHANNON | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 64461 |
| NEWCASTLE WEST | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 64337 |
| CARRICK ON SHU | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30327 |
| ROSSCOMMON | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 56934 |
| WESTPORT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 56453 |
| ROSCOMMON | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 54865 |
| LOUGHREA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 50667 |
| NEW ROSS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 45293 |
| BIRR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 44288 |
| TIPPERARY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 43222 |
| LUTCHER | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 42023 |
| CAVAN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 36453 |
| CHARLEVILLE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 36453 |
| CASTLEROY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 3578 |
| DERRY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 34653 |
| BUNNAGAR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 34523 |
| ENNISKILLEN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 29162 |
| RAGHALLIGOWN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 27753 |
| DERRY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 28023 |
| KILCOY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 25257 |
| BALLilogue | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 25325 |
| CASHEL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 22553 |
| FERROY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 22222 |
| CASTLEMORE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 20457 |
| BANDON | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 19197 |
| BALLAGHADERRE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 18225 |
| CASTLEJAY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 17523 |
| THOMASTOWN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 17452 |
| SWINFTON | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 14232 |
| CHEREEVEEN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 11658 |
| CHARLESTOWN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 755 |

9001  Morphogenic Progression as described in Chapter 8
Morphogenic Progression in order of designation priority
From fig. 901, the following observations are of particular interest. Below the population threshold of 5000, in towns without designation, there is a distinct absence of activity between columns 11 and 16. This column area represents the reaction of trading to pedestrian routes through the block crust and appears to suggest that below this population threshold the pedestrian activity is not sufficient for shops to rely only on exposure to these routes.

The block of activity recognisable in columns 5 to 10 is that associated with block core parking demand. This appears to be consistent through towns of all ranks in size and preference. Charlestown falls outside this activity, perhaps because at its population level, on-street parking still meets demand or its unique rear access system fills the service. Thurles however is more conspicuous, related here to the fact that, exceptionally, it has a number of surface car parks opening directly off the street frontage. Carrick-on-Suir steps firmly into the process at this stage but progresses no further. This may relate to the fact that Clonmel, as a nearby competitor with designation and larger scale of attraction, shows full participation in almost all subsequent stages.

Columns 16 and 17 are important indicators, representing the point at which the town recognises the core space as part of the street network. Towns which reach this stage show subsequent clusters of activity in the columns which follow.

The opening of frontage to the core is not prevalent in the very large towns or in the very small towns, but most prevalent in middle-sized designated towns below a population of 20,000. This presumably reflects the stronger street-established prominence of the upper towns, the absence in smaller towns being perhaps a reflection of the unwillingness of shops to commit frontage to core spaces where less activity has been established.

The subsequent effect of Local Authority investment in the process is quite evident (columns 9 and 17), particularly in towns which receive designation. Only three out of thirty-one are without Local Authority intervention in the supply of the car park, and only three without lighting and footpaths to same. The Local Authority must be seen as a significant force in the extension of the street domain into the core area.

Column 19 is a noticeable terminal point for many lines of change. This is significant as it represents a risk threshold for traders to invest beyond the security of traditional site options. It is non-terminal in the top eight towns, where risk would be lower due to assured footfall. Its terminal nature is also less obvious in the remainder of designated towns where greater activity is secure. It is however a noticeable stopping point in the smaller towns.
In the relationship between column 28 and subsequent columns it is clear that the introduction of multi-storey car parking in the core commonly leads to, or tends to be part of, developing vertical use-subdivisions, whether or not a recovery plan, as indicated in column 27, had been initiated.

As might be predictable, there is no recovery process (column 27) evident in towns below the designation threshold, clearly because investment has not overstretched the settlement structure to such a degree that elements of recovery would be called upon.

Ashbourne shows no upper floor vacancies in column 5, because as a roadside village at the beginning of the process it did not have upper floors. It shows multi-storey car parks at the end of the process, because, like Clane, Swords, Maynooth and Naas, it expanded enormously in size as part of the Dublin Metropolitan Region in the years over which the process has been observed.

Figures 9001 and 9002 list all 66 towns of the full sample. It must be observed however that Dublin, Cork and to some extent Limerick belong to a rank of urban structure which is not typical of those in which examples of the phenomenon are common. Figure 9002 represents as closely as possible the weight of incentive given to settlements, by both designation and market role, from high on top to nothing at the bottom.
Table 9004: Frequency of the occurrence of stages in the process

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>House over shop with garden</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Merger of two or more plots</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Shared rear access route</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Early shopping arcade</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Upper floor vacancy</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Rear customer car park</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Rear customer door access</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Rear merger of car park plots</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Municipal core car park</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Dedicated vehicular access street</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Shops address pedestrian link</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Bespoke arcade pedestrian link</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Shop passage units with anchor</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Shop passage without link</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Outdoor pedestrian link-street</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Shop rear frontage to car park</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Footpath and lighting to car park</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Shop main frontage to car park</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Shop only frontage to car park</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Car park frontage blank to street</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Core to core pedestrian linkage</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Land-locking</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Residence addressing core</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Suburban uses addressing core</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Closure of frontages to core</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>Return of passage to single shop</td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>Block recovery to new layout</td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>Multi-level car park in core</td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>Vertical subdivision of land use</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>Core access service structure</td>
<td></td>
</tr>
</tbody>
</table>

Figure 9004 illustrates the frequency of process stages among the total sample of 66 towns. Numbers in the frequency row indicate the number of towns in which at least one instance of the stage may be found. The relationship between upper floor vacancy and the development of car park activity is suggested in the cluster (50 instances) between 5 and 10. The investment confidence associated with dedicated pedestrian links shows a similar cluster (30 instances) between rows 12 and 19.
9.02.00 Observation from the field

From the above tables patterns of evidence are readable. An important supplement to the tabulated information however is observation from the ground which would explain common or specific background reasons why some towns miss or jump certain stages.

While the gazetteer (appendix 16) describes each town individually with attention to general circumstances, a summary of some sample observations extracted from the field work is considered relevant, locating prime examples of the process. The following brief summary therefore draws attention to conspicuous examples from the above field.

Early stages of the process

Almost all sixty-six towns of the parent sample display the early symptoms of block metamorphosis, such as derelict upper floors, redundant backlands and residential diffusion in the surrounding countryside. The demand for car parking is recorded (in development plans) but in many towns is still accommodated within the street space (Granard, Templemore, Thurles, Castlerea) without conspicuous reaction within the block. In Thurles, with a population of 8000, all dedicated car parks open directly on to the street.

Re-use of nineteenth century lane structures

Of the towns which are at the earliest reaction to use of the block core to serve the street from behind, many have developed service and parking through the nineteenth century lane systems which are publicly accessible (Ballygar, Ballyhaunis, Charlestown, Listowel, Swinford). A modern version of this lane type has been provided on the west side of Abbey Street in Tralee.

In many cases where such lane systems had given access to outer plots, these plots have been colonised both by car parks and block core uses of larger scale (Ballaghaderreen, Maynooth, Listowel, Swinford). In both Ballaghaderreen and Maynooth, the outer plots have been used for a large convenience anchor store (5.05.02) (5.08.01) (10.01.06). In Swinford, on the block south of the main street, the outer plots have been assembled by the local authority to provide a car park.

Early core car parks

In many towns of different rank, rear yards, accessible through frontal archways, are still in use as customer car parks, serving just one plot (Ashbourne, Castlerea, Dundalk).
The simple double-ended shop, of pedestrian entry from street and vehicular entry from a car park behind (stage16), is still very popular (Monaghan, Castlerea, Clonmel). Connected clusters of rear car parks extensive enough to provide user choice but too thinly stretched to induce inversion are found in Cavan (east side of the main street) and Waterford (west of Broad Street).

*The municipal car park*

The block core car park as provided by the municipal authority tends to be advertised as an attractive facility in many towns (R07) (Longford, Sligo, Clonmel, Castlebar, Dungarvan, Dundalk, Roscrea, Birr, Ennis). In Ennis the Abbey Street car park borrows land from the tails of the plots which it attempts to serve, in the process depriving some of them of the floorspace which they might have developed to avail of its presence.

Associated with the public car park is the provision of regulated access from flanking streets. In most cases the local authority has developed this in tandem with the development of the car park (Longford, Sligo, Ballina, Athy, Cashel, Dungarvan). In all of these the entrance, being a full street with footpaths, acknowledges the car park as part of the street network.

In many cases where the block is on a perimeter of the town centre, an access road has been introduced to link the back edge of the block to the town’s perimeter road system. (Castleblayney, Ballinasloe, Roscrea, Ballyhaunis, Carlow, Roscommon, Monaghan, Castlerea, Charleville, Dundalk).

*Reaction by the pedestrian route*

In many towns, a high frequency of lanes competes for pedestrian desire lines between the block core and surrounding streets diffusing the value of each and thus discouraging frontage (Kilkenny, Killarney, Navan, Enniscorthy, Ennis). Rafferty’s lane in Navan is one such example whose frontages have died. On the other hand in Bray the village-gate laneway has exclusive profile to the desire line between car park and street and is active with continuous frontage. In Ballina a pedestrian lane is heavily steered to force it past too many frontages. As a result it is too indirect and no longer used.

The convenience anchor, grouped with convenience retail supports, focussed on a short pedestrian mall between edge of car park and street, accepted as the most popular block edge cluster combination (stage 13), has many examples across different scales (Clonmel, Roscrea, Sligo, Killarney, Roscommon, Ballina, Killorglin). Killorglin has a
particularly ambitious example anchored by a Supervalu with some small shops, using the original block service lane to link the main street frontage to the Mill St car park behind. The Johnston Court Shopping centre in Sligo (13174 in chapter10) overlays three shopping passages of different periods on the same site, rebuilding at increased scale over time on an established pedestrian desire line.

A variation on the passage from street to surface car park is the passage of shops between the street and a multi storey car park as anchor (Naas, Kilkenny). In the examples attempted however, the car park has not generated enough footfall to feed the passage.

**Block edge and the double-ended shop**

The extent to which block-edge operations are affected by key dimensions such as depth of plot and width of block appear in some interesting comparisons (Ballina, Clonmel, Longford, Cahir, Cahirsiveen). In Ballina, double-ended shops work in Tone Street but not on the west side of Pearse Street where the distance between block core and street is too great. Distances are similarly too long on the north side of the main street in Mullingar and on the east side of the main street in Longford. On the other hand the residual plot depth is too shallow to support shops in Abbey St (north) in Ennis. In Dungarvan an exceptionally long seven metre wide by eighty metre long double-ended shop is attempted on the north side of O’Connell Street.

The exposure of stages 18 to 20, where shops give prominence to a car park frontage, is one which harbours a high risk factor for shops on a block perimeter, and the range of success and failure is represented at both ends in our samples. The risk is less of course for shops which maintain double frontage (16,18), but many cite management difficulties (R01, R17) with such option.

Supervalu Castlerea has switched its checkouts to the car park side of the shop in rejection of the street side. Planning controls had attempted to prevent this circumstance in an earlier Dunnes stores development in Castlebar. In that case the supermarket had its original frontage to Shambles Square, but had proposed to remove all frontage to the square focussing instead on the car park behind. A side entrance as compromise was permitted. Almost all of the units which define the edge frontage to the centre block in Navan (stage19) are separate plots unconnected to the street-facing sites, the plot tails of which they occupy.

For various reasons block-core car parks do not always induce retail frontage around the perimeter (Bray, Longford, Dundalk, Callen, Cashel, Carrick-on-Suir.). Bray has block core
car parks behind both the west and east sides of its main street. Up to 2011, neither had induced frontage development. Here, as in many towns, the dominant factor is the risk associated with marginal anticipated pedestrian activity (Ennis, Enniscorthy, Mallow, Maynooth, Navan, Newcastle-west, Swords). Mallow and Ennis have many examples of small block-core spaces, the resultant activity of which would not attract retail interface.

**The edge car park in the unravelling town**

The development of car-accessed land uses around perimeter car parks creates an outward disconnection of form and space on the edge of town centres (stage 25). In Ballaghadereen, the Supervalu moves outward at two stages; firstly from inner plot to outer plot, secondly to the outfield edge of centre, broadly maintaining its relationship to the unravelling edge of town. In Charleville, the Supervalu is positioned strategically on the town side of the perimeter car park, which freely expands in the opposite direction.

In Ashbourne, Tesco, though having other options, chooses a standalone position adjacent to a perimeter surface car park. This format (stage 24) is repeated in Castlebar (Hopkins Rd), in Letterkenny (Pearse Rd), in Athlone (Golden Island), and in Maynooth (R148), where fringe car park squares, with little back-of-pavement activity, become the focus of the expanding urban perimeter. Such an open-form square is frequently used as a land use interface, having commercial uses on its town side with matching high density residential uses on its suburban side (fig.8148). Cecil Walk in Nenagh and Water Lane in Tullamore create such edge-of-centre spaces between the block core car park and the edge of town.

**Core car parks with street-only connection**

Ennis has one example of a block-core multi-storey car park, which does not interact with surrounding edge uses but has one entrance from the street for both pedestrians and vehicles. Similar surface car parks, with street only incidence, occur in Bagnalstown, Birr, Dungarvan and Fermoy. South of Redmond Square in Wexford is an example of a new perimeter block (fig 9014) with a surface car park core surrounded by street-facing shops with their backs to the core. The built structure of the perimeter has a ground floor depth of a mere 11m.
Clutter control

The chaos of some backland expansion has trapped earlier uses in positions of intermediate blockage which limits further development of some blocks. Carlow (South of Tullow Street), Nenagh (Well Road), Portlaoise (Lalor Avenue) are early examples of such clutter. Navan has a warren of eclipsed car parks and trapped spaces, landlocked within the north eastern end of its central block. Mallow has a similarly confused fabric, south of the east end of Davis Street with an intense area of dead-end pedestrian routes and landlocked plot-lets. In such state earlier parts of the process have no leading role in later parts, while later parts are unable to tie the earlier parts together.

Observation

While the overall objective of this chapter 9 is to position the findings of chapters 8 in the practical context by reviewing the extent and distribution of such findings, the above brief summary (9.02.00) is inserted as a reference to prime examples on the ground. It attempts merely to relate the theoretical observations of this work to context and place. (for a more comprehensive description of towns see appendix 3)
9. 03. 00 Retail Interface as Generator of Urban Layout

From the evidence assembled, there appears to be a distinct path of progression led by, or associated with, retail interface. The place of retail forces in the overall metamorphosis thus leads us to consider these separately. Retail interface progression is laid out in a systems diagram shown in Figure 9020.

Figure 9020 suggests the extent to which retail use at the trading line between seller and buyer has influenced urban layout. This is a concept diagram, not measurable but purely schematic. It should be read in conjunction with Figure 9050, which attempts to summarise the push and pull factors that encourage retail activity to move from stage to stage. It attempts to identify the ideas or triggers which generate each subsequent stage.

The central linear space which runs along the spine of the diagram represents the position of the traditional street space. The blue rectangles represent retail units, some in their traditional street edge positions with plots behind shown by line enclosures. The diagram generally represents a chronological development from left to right, but the circle and arrow combinations represent typical paths in retail locational development more accurately. This chronology, assembled from our three sources of evidence is as close as our findings suggest to the order of retail development in nineteen alphabetical paths of influence, from early A to late S. Each circle and arrow represents therefore a path of development from one or more unit-combination to another, the combinations numbered according to their place in the broader progression, outlined in detail as stages in Chapter 8.

Fig 9020 shows all stages (numbered) and all paths of influence (lettered) together, while figs 9021 and 9022 show specific examples of paths of influence. For example, fig 9021 shows stage 24, with R showing paths of influence from stages 13, 16, and 19.
Figure 9020 System Diagram showing paths of influence (lettered) which lead development from each stage (numbered) to others, as described in 9.03.01.

9.03.01 Retail adjustment and stage-by-stage paths of influence

A; The single unit, in the ground floor of a traditional shop, expands for greater floor space by the acquisition of an adjacent plot, or plots. This is a natural development influenced by the experience of using and developing the plot and its built form, both of which extend in the image of the original (1). There is evidence of its existence from as early as the existence of the burgage plot.

B; Plots in combination develop shared rear access routes in response to the need for vehicular access, and to avoid taking such access through the valuable shop frontage space. This idea is generated from the experience of trading within the original plot and the need to separate access service activity from the interface with the customer and the street, thus replacing the previous practice of archway access from the street. This development exists throughout the history of the burgage plot but from our evidence becomes particularly common in the nineteenth century.
9021 Access frontages to retail units

C; In response to greater service access needs, but also with the arrival of the car-borne customer, the single plot develops customer parking in the rear area, accessed from either front or rear, on redundant land previously used as garden and service space for upper floor residence. This practice develops significantly in the 1960s, generated by the experience of street kerbside parking reaching capacity.

D; With the developing value of customer car parking, plot boundaries are removed and owners pool the area of access space to provide greater areas of more efficient parking over plot combinations. This idea has origins in the experience of customer attraction from stage 6 together with the plot owner co-operation experienced in stage 3.

E; Municipal authorities expand the idea generated in D above by the purchase of groups of redundant plot segments in order to provide plot-tail parking at a greater scale of provision, with regulated layout in proximity to the street. The resulting stage 9 is a direct increase in scale of the ideas experienced in stage 8.

F; A framework of access routes develops to and between segments of plot tail car parks, using existing rear laneways. The municipal authority supports this with connections to the development of inner distributor links to the road system, frequently co-ordinated with a bypass around the town centre. By the addition of enhanced access (stage 10), the Authority can thus strengthen and extend the investment of stage 9.
G; Existing laneways which convey the shopper between the street and the parked car are identified as desire lines by adjacent shops which accordingly adjust to the idea of opening frontage to the lane, which becomes a shop-lined pedestrian passage, at stage 11.

H; From the development of stage 11 out of an existing circumstance, the idea of purpose-built internal and sometimes external shopping passages develop at strategic pedestrian linkages between car park and street, with frontage space focussed on the pedestrian route, as stage 12.

J: Meanwhile, the traditional street-focussed plot, now finding public activity occurring outside both its front and back boundary, begins to react to this by opening frontage to both ends (stage 16). This arrangement becomes particularly opportune for the large convenience store in its connection to the car park. Smaller shops also capitalize on in-store passage by shoppers as alternative to the shopping passage at H above. The diagram shows arrows going in two directions here, though both represent the same theoretical path. One goes to the common plot with front and back frontage. The other goes to the larger store such as the supermarket with similar dual frontage over a larger, assembled, site.

K; As shopping passages compete for the ideal combination of best strategic route position and efficient combination of shops, the convenience anchor with a combination of specialist convenience supports and a short pedestrian mall between edge of car park and street begins to dominate as the ideal block crust combination, as stage 13. This combines ideas from three sources as shown (9022). The first comes from stage 16; the large supermarket on an assembled site, with one façade to the car park and another to the street. The second comes from stage 12; the purpose-built public link between car park and street. The third comes from the early experience of stage 14, the ongoing range of first-generation shopping passages with use combinations and space combinations which worked or did not work as attractors.
L; Following The idea developed in stage 12, the combination of pedestrian passage and associated retail units goes through a series of exploratory phases tempting the pedestrian to various public and semi-public through routes, including the cul-de-sac passage opening to the street only. None succeed in the manner of K, although some are fortunate to develop specialist roles.

M; Shops which have exposure to both street and car park, begin to direct their primary exposure to the car park, in acknowledgement of more valuable activity there, leading from stage 16 to stage 18.

N; The idea of the car park as the new emerging urban space gives value to the sale of site-tails from streetward plots, or of new plots with frontage only to the car park, not associated with the street. This results in new retail plots, at stage 19, which are now totally dependent on the activity of the car park.

P; As a further development of the idea developed at N, retail plots which still occupy full plots from street frontage to car park, now direct their frontage to the car park only, closing access through their frontage to the street, or reducing it to window display only as stage 20.
R; The freedom to expand independently leads some larger retail outlets to uncouple themselves from the fabric of the block edge and reposition themselves on the outer perimeter of the car park, which they now address in a detached suburban form, as stage 24.

Fig 9023 showing constituents of R, in the creation of stage 24

S; With block core car parks becoming more focal than the block-edge facades which address intermediate streets, a tendency for block cores to link across streets becomes desirable. Pedestrian links to streets tend to settle at positions opposite to each other and the central point of the street length tends to acquire greater land value than does the end-of-street junction, because of greater proximity to the block core.

T; Led by the idea of path R, the car park uncouples from the urban fabric and becomes a separate parking square, having no perimeter plot connections to surrounding streets, surrounded by detached road-facing retail units including multiplex cinemas, retail warehouses, and linked by a perimeter road system to similar parking squares, in a new road focussed townscape, in expansion of stage 24.

U; A surprisingly common, later offshoot of the sequence is a small group of arcaded shops centred on a vehicular route between street and car park which passes under an archway at the street face, having retail on ground floor and two floors of apartments above. In the many
towns in which it is continually attempted, it fails to retain permanent shop units but, led by ideas from stage 10, continues to reappear.

A summary table of the above process is laid out fig. 9050

<table>
<thead>
<tr>
<th>Path</th>
<th>Leads From</th>
<th>Leads to</th>
<th>Leading objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1</td>
<td>2</td>
<td>Expansion of trading floorspace</td>
</tr>
<tr>
<td>B</td>
<td>1</td>
<td>3</td>
<td>Shared rear access structure</td>
</tr>
<tr>
<td>C</td>
<td>1</td>
<td>6</td>
<td>In-plot customer parking incentive</td>
</tr>
<tr>
<td>D</td>
<td>3 6</td>
<td>8</td>
<td>Pooling of circulation for increased efficiency</td>
</tr>
<tr>
<td>E</td>
<td>8</td>
<td>Car park</td>
<td>Public development to increase scale and capacity</td>
</tr>
<tr>
<td>F</td>
<td>3 10</td>
<td>Car park</td>
<td>Access to block core by road network</td>
</tr>
<tr>
<td>G</td>
<td>Existing lane</td>
<td>11</td>
<td>Response by frontage to pedestrian link footfall</td>
</tr>
<tr>
<td>H</td>
<td>11</td>
<td>12</td>
<td>Maximisation of exposure to pedestrian link footfall</td>
</tr>
<tr>
<td>J</td>
<td>1</td>
<td>16</td>
<td>Double-frontage retail outlet</td>
</tr>
<tr>
<td>K</td>
<td>12 14 16</td>
<td>13</td>
<td>Location of anchor to harness pedestrian link</td>
</tr>
<tr>
<td>L</td>
<td>12</td>
<td>14</td>
<td>Pedestrian route through enforced exposure</td>
</tr>
<tr>
<td>M</td>
<td>16</td>
<td>18</td>
<td>Development of primary frontage to car park</td>
</tr>
<tr>
<td>N</td>
<td>18</td>
<td>19</td>
<td>Plots with frontage only to car park</td>
</tr>
<tr>
<td>P</td>
<td>19</td>
<td>20</td>
<td>Redirection of plot frontage from street to car park</td>
</tr>
<tr>
<td>R</td>
<td>13 16</td>
<td>24</td>
<td>Uncoupling of large scale retail units from street fabric to outer edge of car park</td>
</tr>
<tr>
<td>S</td>
<td>9</td>
<td>21</td>
<td>Priority of block-core linkage over street line</td>
</tr>
<tr>
<td>T</td>
<td>24</td>
<td>24</td>
<td>Road-focussed retail environment</td>
</tr>
<tr>
<td>U</td>
<td>10</td>
<td>15</td>
<td>Covered streetlet</td>
</tr>
</tbody>
</table>

Figure 9050

9.03.02 The anchor store as main player

From the sequence laid out in the above diagrams and from the response of stakeholders (R04,R08,R14) two observations in particular become significant. The first of these relates to the location of the convenience anchor in K above. The connection between car park and retail is critical in the case of convenience shopping, where the shopping trolley is used. It is
less critical in the case of comparison shopping as here purchases are either carried by hand or delivered.

In the larger city the convenience anchor is frequently assigned to the suburbs where access is easy, no frontage attraction is necessary and land values are lower for car parking. Although the rejuvenation of inner city residence has re-introduced the relevance of inner city supermarkets, central Dublin supermarkets in Grafton St (M&S), Henry St (Tesco Jervis) and St Stephens Green (Dunnes Stores), are found in the basement of comparison-goods ground floor outlets. Here floor values are lower and no frontage attraction is deemed necessary. In the context of the smaller town however, convenience shopping as an anchor is more significant as the main attractor to a town-centre visit of mixed shopping experience (R02,R09,R13).

The Tesco store in Roscrea (08510293 in fig.1024, chapter10) is drawn to its current location by a number of factors. The scale of its operation draws it outwards to connect with access from the perimeter road structure. Here it attempts to relate to the feeder roads of River Lane and Church Street. The planning authority has on the other hand attempted to draw it inwards to the edge of the town centre by the application of the sequential test (PPG6,UK,1996) requiring that it be contiguous with adjacent retail land use. A planning condition requests also that in the organisation of its layout, check-outs be moved from the north to the south end of the store. This reflects the need to relate its activity to the block core.

A number of towns, including Roscrea, have seen their major convenience store locate just outside the core area beyond the plot tails, in what Conzen would term the inner fringe belt. Other example towns are Roscommon, Ballyhaunis and Ballaghadereen. For a town of the size category in which the centre is walkable from a single car-parked position, this arrangement presents an almost ideal support structure. In Roscommon, where the store position has a direct link to the main street, the resultant layout fulfils very closely the most commonly-achieved objectives of PPG6.

The original Tesco store in Roscrea (see chapter 10, file12510190), together with that in Clonmel, (chapter 10, file 08550126) and Sligo (chapter 10, file 126) are first-generation Tesco stores of stage 13, as illustrated in fig. 1120. All of these followed a similar relationship between street and core car park. They form the anchor of a shopping passage between the car park and street which incorporates a series of smaller separate units. This is obviously a successful tested formula for Tesco, as much later versions of the same layout appear in, for example, Killarney. The circumstances of the three which we illustrate have
slight differences. The original locations have proven restrictive to the expanding stores at Clonmel and Roscrea so these have moved to larger standalone locations; Roscrea in a related position within the block, and Clonmel to a remote site. The Sligo store has opted to expand on its site. The relationships between town size, catchment and desirable Tesco store size are of course critical.

In the pre-1970 period of first generation supermarkets, many of the towns in middle-size rank had their principal supermarket established by the Williams chain trading as Five Star (R19). This chain was purchased in 1987 by Power Supermarkets trading as Quinnsworth, which was itself subsequently purchased by Tesco in 1997 (R14). The earlier stores such as at Sligo and Clonmel would not therefore owe their layout and site selection to the ideal Tesco model. Roscommon (chapter 10, file 011745) however, arriving almost thirty five years later than Sligo and Clonmel, and now designed exclusively for Tesco, interestingly selects the same layout form as did the others in their original state, though on a site which facilitates every element of this at a larger scale. The success of this layout type may lie in the fact that it serves very closely the broader typical customer visit to a mid-rank town (Chapter 8; 8.04.02) (Hillier Parker, 1997, Convery, 1999).

In Longford, the other one of our three case studies in which Tesco has free choice of form, Tesco selects a site, unconnected physically to the surrounding fabric, but in total command of its car park. It gathers other outlets under its roof to create a number of support shops. The Tesco positions in Longford, Roscommon and Roscrea are therefore very similar.

In Ballina the Eason store (chapter 10, file 052630), designed in 2005 for a national chain, runs a straightforward bookstore through the full transect, of 30m, with entrances to both street and car park, in a manner that could belong to the very first stages of the process, forty years earlier, simply because it follows still the most obvious way to develop the site. At both ends the building form rises to upper floors of office use, in order to fill the frontage of its plot.
Fig. 9053  Phase leaders

The orange rectangle defines a middle phase in the typical sequence with early to the left and later to the right. In the early phase, development is induced by individual plot development. In the middle phase it is induced by competition between street, car park and the connecting routes between these. In the final phase development occurs in response to the car park only (9.03.03)

9. 03. 03  Distinct phases led by distinct forces of change

There appear to be three distinct phases in the progression represented by the retail layout systems diagram, each phase led by a different focus. The early or left-hand third represents a phase where development is still preoccupied with serving the street. In the middle third where the car park advances progress, development is about the contest between competing frontages of car park, street and connecting passages. In Fig. 9053 above, this middle phase is represented by the orange square.

In the final third the layout is firmly generated by car-borne circulation. This belongs outside the town centre. What is of interest is its ability, or lack of ability, to plug into the centre, forming a connecting fringe with the suburb.

If one excludes site assembly under single ownership as a process towards increased scale of use, the most common progression from the individual to the collective, in the pooling of resources among plots, is that associated with access, particularly rear or roadward access.
to trading sites. This is a leading force in all phases, differing only on scale in each. The pooling of circulation routes to car parking spaces obviously increases the efficiency of land use in the relationship between space served and route to space.

9.04.00 Reflection

In its attraction to entrepreneurs and stakeholders the emerging process under study was perhaps moderated by the fear of excessive change in smaller towns or the caution, for investors in particular, that some towns had not reached a suitable threshold of market activity. When records of the process from sixty six sample towns are laid out in matrix form, clusters within this attraction become clear. Diagrams 9001, 9002 and 9004 may be read as maps of investor confidence or trading confidence. These reveal areas of security where towns make an easy transition from stage to stage as distinct from areas of risk where towns pause in some clusters. It can be assumed that risk increases as investment increases but a careful examination of the clusters will show that once a threshold is crossed, a sense of security is indicated by the cluster of stages which follow and this security appears to increase with town size.

The relationship between the pedestrian link and the car park is particularly interesting in its sequence of development, firstly where the link awaits the development of confidence generated by a desire line, and secondly the confidence which builds around its profile, once it has been established.

On the ground, the disposition of elements in reaction to the inherited layout of each town serves to illustrate the combined influence of local circumstances, showing the common reasons for success and failure. The experience of interviewees gave an important insight into the identification of triggers of change as laid out in figure 9050. The questions of why and when a seller should move in a changing urban structure did impose, according to retailers, a level of stress and vigilance on traders which had not existed in the earlier town of the 1950s.

From the layout shown by figure 9053, the difference between the three generators of activity and the respective urban forms which result is significant. Evidence from development on the ground shows that towns which join the process later, deem the previous stages unnecessary, to be skipped, as the perceived ideal form may be reached with greater confidence. Here the speed of transformation increases.
Chapter 10

Six Case Study Blocks

10. 01. 00  Introduction

Examination of the cartographic development and field state of sixty-six towns has allowed a comprehensive plotting of the process under scrutiny. This has been laid out chronologically in chapter 8 (and its distribution in chapter 9). Its detail is now examined with a focus on specific sample areas. For this, six blocks have been selected which, as previously outlined (chapter 3, Table 3007 Rank A), are representative of the process, containing some or all of the stages described in chapter 8. In this chapter, planning files in particular form the main source of empirical evidence.

10. 01. 01  Context and history of six case study blocks

The contextual background of each case study block is at this stage briefly outlined. Details of the block sizes and areas allocated to car parking are then included in fig. 1019.

Ballina ( figs 1001, 1003 )

Block area inside street line  36000m2
Area of core allocated to car parking  7400m2
Car parking capacity  228

In Ballina the case-study block lies south of Tone Street. Its eastern frontages are part of the commercial centre. In this block a core car park has been laid out, though not all of the available space within it is paved. To its presence many of the backs of properties on Tone Street have reacted. Here rear frontages line the car park edge in three groups and have been provided with a frontage footpath. One store occupied by Eason booksellers uses the change in level between street and back to interlink its floors over half levels. On the western
end, the Garden Square pedestrian link cranks an outdoor passage to reach the core from an almost corner position on its streetward side. A vehicular passage from Teeling Street lined as a street of shops forms one of the two vehicular access links to the car park. The other is a new open street from Bury Street, one of its sides made of a three-storey building with shops below and apartments above. Demand for parking appears to be exceeding supply in this car park and although not all surrounding plots have developed frontage, a capacity issue similar to that at Sligo appears to have been reached. Apart from a small land contribution from plots on the western side, this entire central site appears to have been assembled by the local authority from one source, having previously been the working yard of a monumental sculptor. Ballina is by origin an eighteenth century landlord-developed town. From this in inherits a layout of largely orthogonal blocks. The case study block, on the edge of centre, is an exception.
Clonmel (figs 1004, 1006)

Block area inside street line 38880m²
Area of core allocated to car parking 6160m²
Car parking capacity 174

In Clonmel the case-study block, closed block north of O’Connell Street and west of Gladstone Street, has been steadily developing a core car park for a number of years. On three sides of the block the edge conditions have induced building and layout types which react to the interfacial aspect of their location, developing dual aspect retail and shopping passage models, between street and car park. The local authority has paved and lit the car park, treating its edges as a square with footpaths. The street to the western edge has been recently widened at which time the local authority availed of its acquisition of buildings to redefine the relationship between the block core and the street. This it did in a manner similar to that in Redmond Square, Wexford, making single-shop-depth buildings with apartments above, and blank rear walls to the car park. New entrances to the car park were also accommodated in the works. Clonmel like Roscrea has seen its second generation stand-alone Tesco recently open elsewhere on an edge of town location, the first generation store within this block having been recently vacated.

Clonmel has a number of characteristics which make it similar to Carrick-on-Suir. On the south side of O’Connell Street which is the obvious spine of the original Anglo-Norman town, narrow lanes run perpendicular to the street, linking to the river, which forms the tail seam of plots on the street.
Longford (figs 1007, 1009)

Block area inside street line  82800m2
Area of core allocated to car parking  14992m2
Car parking capacity  146

In Longford the case study block lies directly east of the main street. Its core car park is addressed by a stand-alone shopping centre, freestanding within the core, anchored by a Tesco store. The car park has vehicular entry from all sides including from the main street and from a new street laid out as its northern entry. West of this street the main-street plots
are deep but generally occupied by small-scale retailers with little obvious expansion ambitions, a combination which as a result, has not attracted double-ended shops. However, a number of shopping passages and interlinked shopping courtyards have developed in response to the location. On the eastern perimeter of the car park, inward facing sites have developed on which the new town library and the district offices of a semi-state organisation are located. The block core, in its original state, accommodated just the burgage plots of the main street with exceptional lengths of 330m.
Roscommon (figs 1010, 1012)

Block area inside street line 87360m²
Area of core allocated to car parking 13600m²
Car parking capacity 196

In Roscommon the east and west sides of the main street have contrasting recent histories. The block on the west side is in almost its original state. On the east the case-study core car park has developed. Some shops on the main street have responded and address it through their plot tails. Two shopping passages have developed linking the car park to the main street. Both have anchor stores at the car park end, and a new Tesco has opened addressing one edge of the car park. On the eastern side of the car park is the cattle mart, and in an interesting relationship, this provides a further anchor destination drawing activity through the shopping passages on fair days, not unlike a similar arrangement at Castlerea.
Roscommon (fig 1013, 1015)

Block area inside street line 53680m²
Area of core allocated to car parking 9992m²
Car parking capacity 208

In Roscommon the main street has been supported by the two convenience anchors for a long time. The case study block lies on its east side where a shopping centre anchored by Tesco sat in the block core just behind the inner-plot line of Main street and adjacent Castle street, with links for pedestrians to both of these streets together with a link to car parks behind. Recently however, a newly-built Tesco has ‘uncoupled’ from the other shops and stands alone approximately 100m to the east, at the extremity of the block, with its own underground car park. This has had an obvious effect on the remains of the shopping centre. The situation has similarities to that in Clonmel.

On the west, or opposite side of the main street, Supervalu fronts the street bounded by a large car park behind, accessible from adjacent streets by Gantly road, a route developed and supported by the local authority. This road has now attracted a number of transect structures through the un-closed block to the developing car parks and some frontages have developed to lane routes and to the car parks themselves.
1013 Roscrea 1911 (OSI)

1015 Roscrea 2011 (OSI)  Block outlined in red
In Sligo the case study block is that between Adelaide Street and O’Connell Street. This block has gone through almost all stages of the process under study, giving a complex history. The block is a relatively large block by the standards of typical blocks, touching the town centre on its eastern side. It has a number of national anchor stores on its eastern and northern perimeters, together with active shopping passages linking it to O’Connell Street to the east. The block core car park has been in use for over forty years and has already attracted many frontage shops unconnected to the streets behind, particularly along its north side.

Until the mid-twentieth century, its core contained, together with gardens, a number of industrial uses creating a heritage of larger than normal plots. In its original state, the plot structure of the block was dominated by the long burgage plots of its eastern perimeter, having shallower plots to the north and south.

In 1965 a department store close the south western end of O’Connell Street opened a car park to the rear for customer use, accessed by archway and laneway by the side of the shop. By 1973 four other plots had done the same. These included a large supermarket and a shopping passage, all with double-fronted through access. Although not all of the car parks were linked, a significant collective parking facility was underway. At this stage the municipal authority, seeing this evolving facility as an advantage to central business, entered the development by assembling an additional area of the block core and combining this with the parking areas already created, to provide, in 1976, a new public surfaced car park for all with a controlled entry and exit through a specially aligned entrance on the north edge of the block. The initial developers on the east side then began to develop shopping passages through their now-surplus archway entrances, each with new developments of small shop units anchored with their own stores. At this stage a separate department store and surface car park which had developed on the western perimeter of the block linked its facility to the others, first for pedestrians, and later for vehicles, creating a large pool of car parking spaces beside the central activity of the town.

The activity generated by this strategic car park quickly attracted investment by others, including entrepreneurs not necessarily already located in the block. Within months a number of small businesses began to develop with frontage to the car park on its north side.
purchasing portions of the backs of plots which on this side had still been in residential use. The local authority granted planning permission for these developments, thus endorsing the emerging layout structure. By 1979 a line of two-storey buildings with shallow 8m deep shops and small offices above lined the northern perimeter of the car park, unconnected to existing shops on the street behind.

Within ten years the entrance from the north had been widened to full street width with properties on both sides opening street frontage to it. This tended to confirm the concept by which the block core was seen as an urban square or extension of the street system. The surrounding land uses could be described as responding to this concept. On the south side of the car park in 1981 a new building housing a pub, restaurant, night club and offices opened with frontage to the car park. Not all edges developed as frontages however. Because the surrounding streets to the east and north were still more active than the block core, many existing shop owners on the block perimeter still gave priority to the original street frontage. Others took advantage of secondary frontage to the car park.

By 1998 however core congestion began to develop. The surface car park began to fill to capacity for longer periods, offering a lesser choice range. The local authority’s attempts to control this with pricing structures had little effect.

Since it was the frequent passage of short-term users between cars and the surrounding streets that had created exposure for shopfronts here in the first place, these shops began to suffer. At this stage, following a shopping demand analysis (Parker 1998) which showed a high demand for both further shopping and car parking in the town centre, the local authority commissioned a study and master plan for the block (NBA 2000) which would identify its role, with suggestions as to how it might broadly serve this role. The masterplan subsequently included a preferred strategy under which the local authority or a licenced developer would acquire all core-fronting development which had already taken place in order to re-assign the block to a new layout structure in support of the surrounding streets, removing car parking to an adjacent multi-level arrangement. This masterplan forms an adopted part of the current development plan (Sligo Borough Council 2010 p80 12.3.5).
Three of the case studies are on the edge of towns, while all six are on the edge of town centres, forming the transition between the centre and other uses.
1019 Area of Block Cores Allocated to Car Parking

<table>
<thead>
<tr>
<th>Case Study</th>
<th>Block Area inside perimeter façade lines (sq.m)</th>
<th>Surface Area of Block Core allocated to Car Parking</th>
<th>Number of Car Parking Spaces</th>
<th>Efficiency Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ballina</td>
<td>36000</td>
<td>7400</td>
<td>228</td>
<td>32.4</td>
</tr>
<tr>
<td>Clonmel</td>
<td>38880</td>
<td>6160</td>
<td>174</td>
<td>35.4</td>
</tr>
<tr>
<td>Longford</td>
<td>82800</td>
<td>14992</td>
<td>146</td>
<td>102.6 *</td>
</tr>
<tr>
<td>Roscommon</td>
<td>87360</td>
<td>13600</td>
<td>196</td>
<td>69.3 *</td>
</tr>
<tr>
<td>Roscrea</td>
<td>53680</td>
<td>9992</td>
<td>208</td>
<td>48.0</td>
</tr>
<tr>
<td>Sligo</td>
<td>52528</td>
<td>13320</td>
<td>406</td>
<td>32.8</td>
</tr>
</tbody>
</table>
In Ireland planning permission is required for development, which is defined as the carrying out of any works on, in, over or under land or the making of any material change in the use of any structures or land. A once-off rear extension may be added without planning permission to the back of a building if its floor area does not exceed 40sqm, of which 12sqm may be on an upper floor. Any greater work requires permission.

A planning application must include a detailed description of the proposed development in the form of drawings and other information as specified by the local authority. For a period of generally eight weeks any third party may object in writing before a decision is reached by the authority. The decision must cite the reasons for any conditions attached to the permission. Applicants or objectors may appeal the decision at national level to the Planning Appeals Board, and all parties may respond to each other’s submissions. All of this exchange can result in documentation of considerable interest.

Our objective is to examine the planning files for a representative period of development in each of the case study blocks, in order to identify, in the discourse and records, the objectives and values of stakeholders and interested participants, with particular attention to files where the principles of proposals relate to any of the process stages outlined in chapter 8. The process of gaining access to files is described in chapter 3 and the files so examined are listed in appendix 5. The location of land to which applications refer is shown in figs 1020 to 1025.

From the six case study areas, a total of 599 planning files were examined comprising 558 Local Planning Authority files and 41 Planning Appeals Board files. Of these, 402 were found to be relevant (as defined in appendix 7). In 152 files, a clear relationship with one or more process stages was identified. These relationships are indicated numerically in appendix 5 (column 8).

At this stage the current development plans which lead development policy were also examined for each of the case study areas and are referred to where relevant. Planning authority officials from each of the case study areas were included in the list of interviewees as described in chapter 11 and some of their observations where relevant are referred to (without direct attribution) in this chapter.
Figures 1020 to 1025 show the location of planning application files in each of the case study blocks. Colours are used to illustrate the land extent of each application. The colours have no individual significance.
1021 Clonmel Case Study; Location of files
1022 Longford Case Study; Location of files
1023 Roscommon Case Study; Location of files
Roscrea Case Study; Location of files
1025 Sligo Case Study  Location of files
10.02.01 The scope of case-study files

From an inspection of files one finds that the process of review of a planning application varies from authority to authority. In the local authority administration of Irish towns the borough engineer has traditionally been the principal technical officer. In Ballina the engineer’s report forms the primary technical document in the assessment of a planning application, covering matters which relate to layout and to morphology in so far as they might be identified. An architect’s report to the engineer is generally included also, but this appears to address exclusively signage and materials. In the technical reports for Ballina, an individual report by the planner is not always included, although a planner is listed on the professional team.

In Longford the main report is also issued by the engineer and, as in Ballina, a separate planner’s report is not always included. The Longford engineer’s report appears to address primarily the subjects of drainage, car parking and refuse disposal and generally adheres to the form of a checklist, which perhaps limits the ability of the authority to make a broader reflective judgement on urban metamorphosis beyond the immediate application under consideration. Roscommon follows a similar format to that of Longford.

In Clonmel however, formal reports, though signed by the borough engineer, are prepared as planner’s reports to the engineer, and are very comprehensive. In their consideration of any planning proposal these reports refer to the planning history of a site and sometimes refer to similar forms of development on other sites. Recognition of the latter similarity can be particularly interesting.

In Sligo a comprehensive report by the planner also forms the main document of the authority’s assessment. It provides a full review of the proposal and sets it against the planning objectives for the area. However as with others, it does not consider the place of any proposal in a broader urban metamorphosis, at least not as recorded.

In Roscrea, a report by the planner also forms the body of the assessment but, like the engineer’s report in Longford, it is in checklist form, perhaps missing the opportunity to reflect upon or to consider the place of any application in the broader direction of the town. It must of course be assumed that planners or other local authority officials may not record all of their thoughts in a formal report, since the report becomes a legal document.

Applications such as those declared invalid or withdrawn are still examined for this research, as they reflect, for our scrutiny, an intention or a wish led by a momentary reason, to alter
the form, space or land use of the plot, whether pursued or not. Applications which lead to a refusal are of course examined for the same reason.

10. 02. 02 Statutory regulation

All development is, without option, governed by building regulations. Statutory building regulations were formally introduced to Ireland in 1991. Although there have been many amendments to detail (Amendments 1997-2006), the structure of the regulations has remained as introduced, subdivided into twelve parts, labelled alphabetically. Part B deals with Fire Safety and, from our examination of files and interviews with practitioners, it is the part which appears to have most influence on the area of our focus. Every planning application is passed to the local authority fire officer for scrutiny, and the fire officer’s report is a consistent factor in the decision to accept or refuse.

Escape routes from buildings defined as publicly accessible, such as shops, appear to have a significant influence on the design of block-edge forms. The regulations state (TG D B1 1.2.2.2 and 1.2.2.3) that, in the event of fire, the occupant of a building should, from any part of the building, be able to reach a point of exit, or a point of choice between alternative exits, in a distance of no greater than 10m or 12m depending on the purpose group of the building.

In the typical shop, with a plot width of average 7.85m and depth of up to 11m, (from our survey as described of 138 plot widths in Longford and Clonmel)(8.02.02), this requirement would appear to have been accommodated traditionally by exit through the shopfront door. However if a shop is extended backwards along its plot, as is now common throughout our samples, the escape distance to the front is then exceeded. A typical plot, seen as a 7.85m wide space, between two party walls, which are not crossable, might thus be viewed as a fire trap. However the regulation does state that with a choice of escape to two opposite exits, the maximum distance of 10m may be exceeded, again depending on the purpose group of the building. If a shop extends therefore to the tail boundary of a plot, with an alternative back exit which is publically accessible from the plot, the regulations can generally be satisfied. This therefore creates a condition which justifies and encourages the development of dual front and back entrances to ground floor premises on a typical plot, a condition which, led by consideration of public safety, is seldom challenged.

In one Clonmel permission (11099) a condition is inserted stipulating that exit from the back of the premises shall be for emergency only and shall not be used for entry, loading or
maintenance. In a permission in Roscommon (10171) the planning authority by contrast orders the provision of a pedestrian exit through the car park end of the plot.

The traditional frontage building on any plot facing the street, with two or more upper floors will also, in any alteration, be subject to another section of Part B of the statutory regulations. This section requires that floors between uses must be of a structure which gives a 30 minute fire resistance (TGD B1 3.2.4), particularly where the uses on different floors belong to different purpose groups as defined in the regulations. Where, in buildings with traditional timber floor structures, upper floors have been vacated by former residence, this regulation has acted as a deterrent to their use for other purposes. Some respondents (R05,R14) have also indicated that insurance companies are reluctant to grant insurance for buildings occupied by different users above and below traditional timber floor structures.

10. 02. 03 Development standards

The main statutory planning instrument in the control of block edge development, common to all of our cases, is the Development Plan for each town, updated every six years, containing within it site development standards. These standards are broadly similar in all such plans. The standards most relevant to our area of study are those which control density, site coverage and car parking requirements. Density, expressed as the amount of accommodation or floorspace per unit area of land, has a direct impact on the volume of built form which can be created. This control at a broad level may be accompanied in some cases by more detailed stipulations on building heights, control of overlooking, overshadowing from daylight and sunlight, adequacy of external space and adequacy of internal space for specific functions, particularly in the layout of residential units.

Many of these standards are in theory set by individual local authorities but in practice are led by national guidelines. Generally where the development plan outlines a requirement to provide car parking space per unit of development type, the local authority has the option to seek the space or to seek a financial contribution in lieu of the space towards the authority's own provision of a commonly usable space, and, as we find from our case studies, this decision varies from one authority to another. The impact of these standards as controls on the form of development is seldom readable in application documentation as they are incorporated at design stage, with attention to the development plan, before an application is made. It is only in our interviews with design practitioners therefore that we can identify such impact.
All six case study blocks have progressed to the stage where the local authority has invested in the development of the core car park as a public facility (stage 9, chap. 8). Funds for this investment come from planning contributions, from those who generate a need for parking spaces which they might otherwise be required to provide on their own ground.

In Longford however there appears to be a tendency by the planning authority not to request contributions towards communal car parking but instead to insist on spaces accommodated on individual sites. In many town centre plots this causes a reduced building form in favour of the provision of car parking spaces. In at least four applications (03700028, 04700146, 04700148 and 04700158) the building form is required to accommodate archway access from the street to a rear on-site car park unlinked to the adjacent block core car-parking facility. In the first application above, one proposed building was omitted in order to provide five car parking spaces.

In two sample Roscommon cases (06103)(071909), the planner recommends acceptance of a contribution in lieu of car parking spaces, where a developer proposes, on a restricted site, to connect to the emerging infrastructure and core car park. The Sligo planner states (0570089) that it is deemed appropriate in all cases to seek contributions in lieu of car-parking spaces. Clonmel, for one sample case (PA7002) seeks a contribution instead of accepting a proposal to accommodate parking on site, citing the reason as traffic safety. The planner’s report in relation to this application (PA7002) refers to the local authority’s intention to construct a multi-storey car park on the site of the existing block core car park. In this particular planning permission, vehicular access to the rear of a plot is permitted for a limited time only, as long-term access would compromise the construction of the multi-storey facility. A similar intention is outlined for the Sligo block, as adopted in its development plan (Sligo County Council 2010 p80), and incorporated into some of the proposals which follow (0670083), (0670043), (0670147)

The emerging recognition of the car park as a primary public space, rather than a rear service space, is at times identifiable in discussion. In a proposal to refurbish a streetward building in Ballina (032417) the architect’s report refers to the fact that “the rear elevation will
be visible from the public car park and is unattractive”. This indicates a consideration for the car park as perhaps an urban space which deserves an attractive environment.

The perceived rank of this space however also emerges in some discussion. In a sample case in Ballina (032426), a planner’s assessment recommends that building facades to the car park should be of two storeys. In another assessment (042568), the architect’s report proposes a similar restriction, ‘keeping buildings which face the car park down to two storeys’. Since in this particular case perimeter buildings to the surrounding streets are generally of three, these assessments perhaps point to the allocation of a different spatial rank for the car park.

In two Roscommon proposals (01210 and 0317160), façades to the car park replicate traditional façades to the street. In Roscommon also, one proposal (01602) extends the existing (Supervalu) convenience store on the main street to a form that addresses, to the side, a street-to-back pedestrian passage, extending the store for full plot depth to a car park frontage. In this, checkouts are directed to the car park frontage. When the convenience store subsequently applies for permission to construct residential floors above (041208), with deck access, these are proposed on the car park side, reflecting this perhaps as a side of greater perceived amenity.

In the assessment of another Roscommon application (042568), the architect’s report interestingly proposes restriction on the development facing the car park, “in order to safeguard activity on the main street”. However when the reason is examined it refers to the objective that buildings facing the car park remain at two storeys.

In Sligo, a new building (0070083) fills the transect breach caused by the entrance from street to car park with a full-length, full-height facade, establishing continuity of the street frontage into the car park. In Ballina the principles of 032455 and 032426 are similar with distinctly different edge treatments, the arch of the former providing an acknowledgement of the edge of the block.

One Ballina proposal (113097) is rejected because it would ‘compromise the orderly development of the car park’, being built on land which, in the view of the planning authority (planner’s report), might otherwise be ceded to the car park. The entitlement of the planning authority to apply this consideration does not appear to be challenged.

The question of surface water retention is one which merits consideration. In their earlier use the block-core plot tails would have had a common use as garden space, of uncovered
ground, having the capacity to absorb rainfall naturally. Table 1019 shows the extent of ground plotage now transferred to metalled state in the core car parks. From these surface water run-off enters the drainage system without any natural delay, bringing resultant pressure on the system and associated flood risk. All of the development plans which were examined (10.02.00)(7.01.05) stipulate measures to mitigate this pressure, generally by directives controlling rainwater at source (Clonmel Development Plan, 2013, vol 1, section 5.4 p44). In many plans, development control measures stipulated that for a typical suburban domestic development, such run-off should be directed to an on-site soakpit, or otherwise absorbed on-site. Within the planning approvals surrounding the case study cores however such conditions were conspicuously absent.

10. 03. 00 Policy

10. 03. 01 Development management policy and participant objectives

The case study block in Longford lies on the east side of the town's central main street. On the opposite or western side of the main street no core car park had initially developed among individual plots. The Local Authority thus recently took the initiative of inserting a 2500m2 car park (Garvey’s Close) (fig 1030). This could be read as a process-priming intervention, placing a later element (stage 9) of the process first. Interestingly however no recordable response was induced among surrounding plot-owners to open frontage to the element.

1030 Longford 2011 (OSI)
Location of Garvey’s Close car park west of Main street
In a not dissimilar situation in Roscrea, the block to the west of the case study block, on the other side of the main street has been developing a progression similar to that of the case study block. To guide this, the local authority prepared a masterplan around an access road and some car parking which had already been established (North Tipperary County Council 2012 Appendix 3 p85) (our fig 1031). In the transect between this road and the main street the masterplan suggests that shops facing the main street should open rear access to this new road, creating double-fronted activity. Because of the parking facility offered on the new road this might however be likely to lead attention away from the main street in favour of support for the newly developing road behind. Whether this represented acceptance of a trend seen elsewhere or part of a structured objective was not clear.

1031 Roscrea
Location of Masterplan 2012 (left) with plan showing new road through core. (source Tipperary County Council)

A planner in another case study area confirmed that the planning authority had no objection in principle to the development of frontage on to core car parks. Indeed the authority would tend to encourage it, in order to enliven the public domain. Here, in the case of two street-fronting plots the planning authority had attempted to persuade retail owners to open a rear frontage to the car park, and in both cases the owners were unwilling to do so, preferring to direct their frontage to the street, which was still active. This might represent a blanket policy, by planners, to support the development of any town centre space, whatever its place in a broader structure.
In response to one Roscommon application (062417), on a plot between Main Street and car park, the planning authority suggested a pedestrian route, in pursuit of permeability. However, the route would not have had sufficient flanking floorspace to accommodate retail frontage (fig. 1034). In competition for pedestrian footfall it was also likely to threaten the viability of shopfronts already trading on pedestrian access ways nearby between the car park and the street. The route sought is mid-way between two established routes which appear to be active but marginal. They appear to provide adequate choice of connection between the car park and the main street. The idea of the third therefore appears to have been provoked by opportunity rather than established need.

1034 Roscommon; link route suggested to planning applicant

In Longford the municipal authority had attempted to encourage a similar route between car park and main street from a proposal which attempted to develop two large plot-tail sites to the car park (01700063 and 03700071) with a link to the street through a third (fig 1035). All sites were in different ownership, and the streetward site was not in favour of any alteration. Here the owner contended that the space, identified and suggested by the planner as the potential link, formed an essential element of his already secure business fronting to the street. From the planner’s point of view, the proposed extra route would have been much closer to a direct pedestrian desire line than would those already established. It would therefore have been a better route for the common good. However, it could have extinguished the viability of business already established by others. Balance between potential opportunity and secure circumstance was thus, as in Roscommon above, at issue.
10.03.02 Policy which recognises strategic block core elements

In its review of a particular planning application (PA12501) (Planning Board Appeal 02.130146), the municipal authority in the Clonmel case study area attempted to secure the provision of larger floorplates in town centre locations in order to facilitate the balanced presence of anchor stores within the realm of smaller shops, quoting its development plan’s retail strategy (Policy objective 7) which attempts to ‘encourage the process of site assembly’ for larger units. The planning application under scrutiny had proposed to subdivide a large floorplate, previously used as an anchor store, into a number of smaller shops. The municipal authority had refused to grant permission.

The floorplate in question, on the Gladstone street edge of the case study block (fig.), was seen as a strategically located anchor, having an inter-supporting relationship with the car park. Here lies evidence of a policy which addresses the importance of floorplates of larger option with provision for growing scales of use, retaining anchor uses close to the centre (pp3) in a considered relationship with other elements of importance.

The earlier research, as described in chapter five (5.05.02) (5.08.01), observed the capability of traditional block core subdivision structures to accommodate large floorplates comfortably in support of adjacent retail uses. Fig.1038 shows the layout principles of this match, using Ballyhaunis as an example. Survey findings subsequently show a number of successful
instances of the match (9.02.02). Interview results (11.01.06) also show among users of the town an awareness of the workability of the match.

1038 Re-use capability of traditional block core layout as typified in an example from Ballyhaunis (1039 and 1040 below)

Floorplate-size demand is closely related to the service function of a town. Westport and Killarney, as tourist towns appear to have a robust demand for smaller units of 150-200m sq.
(R14), on intensified pedestrian desire lines, whereas typical domestic service towns require a more complex combination, including the adjacency of large floorplate combinations for retail anchor support.

10. 04. 00 The Block within the Town

10. 04. 01 Consideration of the block as a strategic element of urban layout

Block serves street and street serves block in a mutually-supportive framework, which is felt in the immediate environment of each. At a different scale, the position of each block in the broader operational structure of the town can be significant. The block core car-park does work efficiently in a town of suitable scale where it links town centre to town edge. This is the ideal position where the user transfers from car to foot. In a larger town where the core is surrounded by built fabric, it works less efficiently.

In the case study blocks of Ballina, Roscommon and Roscrea, the perimeter circulation system of the town forms a tangent to the outer perimeter of the block. In these three instances therefore the position of the car park as transfer from the outer road as supply route, to the inner street as pedestrian realm, or in the transfer of the user from car to foot, sits effectively in the organisational structure of the town. Fig 1045 represents the land use interaction across this zone. Inversion is not yet conspicuous here as all three case studies are at an early stage of progression. In the case of Roscommon in particular, façades to the car park have not developed significant frontage, as the activity of the core has not yet exceeded that of the main street. Pedestrian passages from the main street, one designed and two accidental, have induced some block crust activity. In the case of Ballina where the block has almost but not totally surrounded the core, just four individual façades have recently opened to the core, with some façade activity having opened to pedestrian routes.
In the cases of Clonmel, Longford and Sligo the study block is not on the perimeter of the town. It is surrounded by established urban fabric. In all three cases inversion is conspicuous. However it is also conspicuous in a number of towns where the block core is not enclosed but the town is large (Carlow, Castlebar, Navan), suggesting that the conditions for inversion, though clearly created by active block core car parks, are also created by broader circumstances which appear to relate to the town’s size and associated level of activity. Inversion may perhaps be induced whenever that activity is perceived to be potentially consistent in the domain of developing backlands.
10. 04. 02  The edge transect as subject, and the block as transect

This work set out to study the relationship between street and block. Critical in this is the transect from street edge to block core. To understand this transect, it might not be necessary to study the street-to-street transect across a total block. The transect through one edge might be expected to confirm the typical characteristics of any side of the block, and in theory assume these to be repeated on other sides. However although all sides may be similar in the established land use of a larger city, this may not apply as clearly in a smaller town where a block has evolved through the gradual development of its perimeter streets.

Because the block is formed by different street frontages developing in depth, each block-edge tends to relate to the urban activity which takes place at that edge, or to the hierarchy of its perimeter route (Kropf 2006 p12, Studio REAL 2011 p110). Transects around the edge of a block might therefore differ according to the relative importance of surrounding streets. This in fact occurs in all six case studies. A block may of course in time establish a distinct role in response to particular edge circumstances.

Where the common block of a small town is closed or where perimeter streets connect to enclose it, each edge generally retains its single-frontage plots or plot series (Ibid 2017 p46). The tail seams of each edge will abut at the block core where plots will have their backs to each other or to a separate core land use, the latter frequently having little structure beyond filling the space available to it.

In the case of smaller towns, particularly those in which a main street forms a single spine of activity, the typical block will carry within its transect the transition from town centre to fringe. In this transect the car park forms the core element of transition. Diagram 1046 shows the main constituents of this transition in a layout of typical block size (8.02.02). At the top is the typical traditional relationship, with town centre plot layouts on left sitting back- to-back with inner fringe of suburban layout on right. Below that is shown the developing layout described in chapter 8, where the car park forms the central buffer in transition between plot-filling central retail uses on left and inner fringe uses on right. The inner fringe shows, as example, an office building, or such edge-of-centre use as we have found in this situation. At this stage the car park will have a land demand that will see it borrow any under-used space from inner or outer neighbours. In the third circumstance below this the central retail uses are shown expanded to satisfy floorspace demand, with the car park now expanded to fill the remainder of the transect, other less important uses expelled.
In a smaller town, with an un-closed block or half block, only shops and car park may exist from the beginning. The case studies of Ballina and Roscommon have clearly illustrated this. In such cases the block which is located on the edge of a central business district carries a land use transect across its total section, between centre and suburb, as did the traditional plot within its boundaries.

1046 Block in typical transect between centre and inner fringe

In Westport, early maps show what appears to be planted left-over space for common use in the centre of some blocks (fig. 1047), suggesting that the built fabric of the edge is what defines the block, the block core having a passive role. Applying Conzen’s theory (1988 p260) that ‘the land utilization pattern represents the latest period, while the building fabric
commonly commands the widest range of periods’ the study of sequential development in a block core is therefore likely to yield less evidence than that found on the block perimeter.

10. 04. 03  Transect analysis from different sides of block

The differing edge conditions of the Ballina case study block are of interest. There are four different edge transects. The north (Tone Street) edge supports a set of conditions which link most directly to the process which we have been tracing. Here an active town centre to the streetward side and the car park to the inner side have generated, at a pedestrian scale, a variety of linkages, six in all, together with a line of active rear facades to the car park (032441)(032456)(052630). The east edge (O’Rahilly street) has a potentially similar context of linkages but has generated virtually no linkage activity because of the local presence of blocking sites which separate the tail seams of the burgage plots from the car park edge (10.04.05).

The west and south edges of the block have also generated in principle the same activities as those of the north edge, but at a scale directed only to the car rather than to the pedestrian, as here the streets belong to a different scale of movement. From the south side, vehicles and not pedestrians cross the transect between street and block core and this is reflected in the forms which result (032405) (032455) (082934).

On this side of the block also an application for a McDonald’s restaurant (113125) proposes a drive-in form, with a single-storey building placed centrally on its site, surrounded by its own car parking spaces. There is in such case no pedestrian route through the rear of the site to the block core. A pedestrian must leave the plot by its vehicular exit to the street, and re-enter the block by another route, or walk around its edge within the original street system. This application was refused. In figs. 1061-1066, red lines subdivide the case study blocks into distinct segments, defined in operational character by the street areas on to which they bound. Some segments, outwardly preoccupied with alternative street activity (light grey) do not induce retail land use.
10.04.04 Retail frontage attractors

From the discussion observable in planning files (1170044) (081370) (09700040) it is possible to identify distinct types of frontage exposure which attract retail land use to particular sites. Within the retail floorspace of case study blocks, three types of frontage can be suggested. Figs. 1061, 1062, 1063, 1064, 1065 and 1066 show a distinction between frontage to traditional street, frontage induced by route between street and car park, and frontage to car park only. It is clear that investment-risk level is different among these, as well as is the site-suitability for various types of specialist retail profile, as well as is the stage to which each type belongs in the assembly of the block core development (9.03.03). Ballina and Clonmel, with no convenience anchors, have obviously not generated sufficient activity to attract significant core frontage. A number of small outlets have developed in Clonmel, possibly in circumstances where conspicuous profile is unnecessary in a community familiar with the location of local facilities.

In both Sligo and Longford, core frontage has become established. In Sligo, however, with the exception of the route created to serve vehicular entry to the car park, all street-to-core connections (the middle category) lead through shops or shop-group malls. In Longford, on the other hand, there are no street-to-core malls. Each of these circumstances follows tradition where in Longford outdoor street-to-core routes had developed at an early stage, while in Sligo the desire lines through the block edge had been occupied at an early stage by existing retail outlets.

(In diagrams 1061-1066 red lines delineate distinct sectors of block)
Four of the six case study blocks contain a Tesco convenience store. In a fifth, Clonmel, the Tesco store has recently been lost from the north-eastern corner of the block to a suburban site. In Sligo (0370041), as originally in Clonmel, the Tesco outlet forms part of a shopping passage between street and block core, whereas in the other case studies it is free standing within the block core, an option much preferred by Tesco (R01,R07). In Roscrea an earlier Tesco served as anchor to an older shopping centre which collected two passages from street to core (12510190), but the new Tesco has uncoupled from the street edge and now stands at the outward side of the core (stage 24). This new store has, however, a particularly complex internal layout having a poor connection through its town-facing frontage, with instead a prioritised connection to its basement car park (13510202). One might suggest that the bias is deliberate. One could also of course suggest that the bias responds to customer demand. Either way the user’s visit to the town (as described in 08.04.02) (Hillier Parker 1997) is deliberately managed to give favour to the block core convenience store.

Almost all of the case study blocks have, on one of their sides, the main street as boundary. Thus the block edge is a potential connector between the main street, the principal car park and the town’s main convenience retail anchor. A Tesco anchor forms the major attractor in Longford, Roscommon and Roscrea.

It could be suggested however that there is a delicate relationship between the regional service function of a town as a shopping centre, and the support between anchor and main street. If for example in Roscommon or Roscrea- towns which provide a convenience retail service- a large superstore opens on to the core car park, which is stronger as an attractor at regional scale than is the adjacent street, the street, of convenience shops, may not be sufficiently strong to respond. In such case the street and the car-park/ anchor store could be too spatially diverse to form a composite shopping centre. The relationship is not unlike that between the town centre and a suburban shopping centre, as recognised in PPG6 (UK)(1996). In some larger towns on the other hand, where a strong presence of comparison shops exists, the equivalence between street and anchor store is more balanced. In the case of Sligo the strength of an adjacent street has been a sufficient attractor to hold central stores from the option of moving to the suburbs, but this is uncommon among examples.

One could conclude that with future intensification Longford and Roscommon are likely to settle into a layout form that will define a comfortable relationship between anchor and town, with edge-of-centre anchors similar to those sought as ideal in PPG6. In each, a freely-
placed anchor is sufficiently well positioned to support strong links with the main street where the weight of each is balanced and neither is as yet compromised by the other. Of these, Roscommon (062364), with least inversion, is arguably the most promising. This of course refers to a relationship between two key elements in the town of present-day components as we have known them. Either or both of these may be affected by external forces such as online retail (pp 360,392), which may in time affect broader factors such as the very reason for the existence of a town.

10. 04. 05  Emerging sub-processes within the block crust

A number of what might be described as sub-processes have developed in the perimeter transects of the case study blocks. Many are uniquely local, but some are repeated in more than one case study and are therefore of interest.

In chapter 8 (8.06.03), land-locking was identified as a process in the edge tissue of blocks (stage 22). Some interesting aspects of this are found in the details of case study planning files. In Roscommon, a site on the Main Street is proposed for a broad shopping mall to link to the car park behind (011746). With an expanded rear site width, it appears to block the development potential of adjacent sites. When the application goes to the Planning Appeals Board, one of the objectors referring to an earlier application on the same site (96764) mentions the threat of sites becoming landlocked by the proposed development. This is dismissed by the Board as of no relevance. A subsequent planning application on the neighbouring plot (031451) appears to accept this. It would therefore appear to be established as precedent that sites which expand in width beyond their party wall lines, behind shorter plots, if they are the first to do so, are free to increase the plot scale. A neighbouring plot has no right to protect its expansion potential on land that is not in its ownership.

In the Sligo case study block the expansion of traditional sites from the east side appears to be virtually closed (0470080). In Ballina also on the south-eastern side of the block, which originally held higher land values than those on other sides (fig.1070), an interesting blockage of plot tails has occurred. Here only one site of a total of eighteen has its own frontage remaining to the block core behind. In a fourteen year period, only one other (082913), shows evidence of planning activity, where the typical site depth between street and car park is a mere fourteen metres.
1070 Ballina 2011 (OSI) Plot A initially establishes frontage to car park, blocking four other sites, but plot B eclipses frontage using established rights of way.

Where a block has deep edge plots, the edge itself can begin to develop sub-block characteristics, applying the equivalent of a block cross section to the transect between car park façade and street façade. In Longford (01700063 and 03700071) small perimeter squares develop almost as a block core pedestrian precinct of sheltered spaces, removed, yet openly accessible, from the adjacent car park (fig 1047). In Ballina, (03702456) (or 03720456) the route from street to car park, opens to a similar series of broader pedestrian spaces in between. There are also similar layouts in Westport and Ennis. The process suggests a spatial expansion of the link passage particularly where that passage is long, although in Ballina, (03702456), the intermediate spaces may be necessary to secure a readable route for the user. A particularly clear example of an emerging sub block within the crust of the main block exists in the Sligo case study, on its north side (0770109), where the original mews lane to the street now acts as a service lane to the backs of both the street and car park facades, thus forming a new block core within the crust of the major block (fig. 1073).
1073 Sligo 2011 (OSI) Sub-blocks developing between block core and original edge

In Ballina, a form of designed streetlet has developed (032405), from street to car park for vehicular passage, having footpaths, shopfronts and three-storey buildings on each side, and over an archway on its streetward end, maintaining the continuity of the street edge. (032405) A later proposal, two plots northwards, (152613) attempts to repeat the form but is turned down because it fails to offer sufficient shopfront activity to the vehicular access way (fig 9071). A similar arrangement also appears on a number of sites in Swords, Co.Dublin. We have chosen to refer to this as path U in figs. 9020 and 9050 (Chapter 9).

10. 04. 06 Suburban layout typologies in the block core

There are examples in two of the case studies of the introduction of public buildings to positions served by the block core space as a central public space, but with apparent suburban site layout typologies. This brings with it interesting signals. On the east side of the core in the Longford case study, two freestanding public buildings have been located, presenting frontages to the car park. One is the town library and the other is
the regional office of a community advisory service. Both have an internal organisation which treats the car park as front (figs. 1081, 1082). Each is fronted by a suburban garden, complete with low front boundary wall.

The recent masterplan for the overall block (fig.1083) proposes to relocate the library with a back-of-pavement position on one of the perimeter streets. Meanwhile however the original location prompts thought on the urban structure anticipated by the location of these buildings. Two aspects of this location are important. Firstly both buildings, with significant public profile within a town, introduce a clear acknowledgement of the core car park as a public square or at least a space within the street framework of the town. Secondly and more curiously both, through their frontal presence of garden space, suggest this square to be open and suburban in nature. This suggestion prompts almost the opposite understanding to that of block core being a ‘back’ serving the frontage to surrounding streets.

![Diagram of Longford 1985 (OSI) and Apparent Concept](image)

A proposed (at time of inspection) veterinary clinic (12510437) on the north edge of the Roscrea block might be seen as similar but is significantly different, in location and layout principle, to either of the Longford buildings. It is located on the block perimeter in contact with both the street and the block core. Although the building stands freely central on its site with outside parking treated similarly on both front and back, the building itself is planned...
with its frontal spaces, such as foyer and reception, on the side closest to the street, and its service entrance on the car park side. The layout, taken internally and externally could therefore be taken as acknowledging the vehicular links to street and car park, but ranking these as primary and secondary by the way in which internal spaces are organised. Its function also relates clearly to such an arrangement, facilitating the delivery of domestic animals by drop-off mode. Perhaps then it is for a related reason that here a proposed (at time of inspection) medical group practice selects a location within the older shopping centre (14510152) vacated by Tesco because of the access drop off potential of having the car park as attractor, a reason perhaps for the similar siting of such facility at Redmond Square, Wexford.

The above examples raise interesting meanings in the relationship between plot and urban realm, and indeed between the organisation of the building and the organisation of the block. In the traditional town, buildings of different plan and function sit side by side, but the relationship between the building and the public street, be it of suburban setback, back of pavement or whatever other form, respects an understanding of unified formality by participating plots. In the Longford space the two public buildings in question pursue a very radical interpretation of the block core in the fabric which they lay down.

10. 05. 00 System diagram and the case studies

A test of the case study blocks against the system diagram developed in Chapter 9 (fig 9020) reveals some interesting comparisons (figs. 1091/2/3/4/5/6).

The system diagram (fig.9020) was assembled using evidence from the full sample of 66 towns, listed in appendix 2 and described in appendix 3. The process stages are listed in appendix 1 and the lettered paths of influence are described in chapter 9 (9.03.01). This following diagram (figs. 1091/2/3/4/5/6) focusses only on stages associated with retail activity in the case study blocks.
Almost all of the early stages and tracks of influence (9.03.01) are visited by all six case studies. Stage 3 is not common as, although some blocks did have residential mews lanes, no instances of this stage contributed to the core parking space.

In both Sligo and Clonmel the process reaches a plateau at stage 13 without progressing to stage 24. This illustrates the fact that in each of these towns the case studies are located in town centre blocks, with space limitations, where saturation has occurred. In Clonmel the process does reach stage 24 elsewhere but not in the case study block. In Sligo it remains at stage 13 through a combination of planning control and the critical mass of surrounding retail activity in the centre.

In Roscrea, Roscommon and Longford the process reaches stage 24. In Longford the path to this stage does not go by the common route through stage 13, as the block edge on its western or retail-active side is too deep at 120m to accommodate large double-ended floorplates, as required by stage 13.

There is a certain period relationship exposed in the diagram. If one excludes the Ballina block, where size-limitation inhibits large-scale anchors, the other two cases which do not move to stage 24; Sligo and Clonmel, represent the earliest developed blocks, both active from the nineteen-seventies. Longford, Roscommon and Roscrea on the other hand belong to the development pulse of the nineteen-nineties. In the time interval between each, a change occurred in the scale of floorspace required by typical retail uses. In the earlier cases stage 13 would have satisfied many development objectives whereas in more recent cases the larger scale of stage 24 would have been sought for similar outlets as a normal minimum store size by many anchor chains. Planning files show that in both Clonmel and Sligo convenience anchor stores have moved or attempted to move off-site to achieve stage 24. In Roscrea the major convenience anchor store has moved within the case study block from 13 to 24, since space is in this case available.

Roscommon and Sligo represent the most common paths of development. Ballina may appear least developed but here all of the stages 16, 13 and 24 have been reached individually in surrounding blocks.

There are of course many alternative paths and options followed throughout the sample towns together with circumstances where a path draws influence from one block, or from one town, and applies it in another. However, in a sustained pattern, the progression of any retail business follows the system diagram from left to right. If this diagram embraced a large sample of towns it is possible that distinct typologies of regeneration pathway could be identified.
10. 06. 00 Conclusion

One of the emerging advantages of the chosen case studies is that the various studies cover different phases in the overall process already identified. From the comparative activity of these six case study blocks, it becomes noticeable that the six may be placed in a distinct order in the context of the chronology outlined in chapter 8.

Although in real time, the activities recorded in Clonmel occurred much earlier than those in Ballina, activities synonymous with early stages are recognisable in both cases, particularly in Ballina which may be identified as an early-stage diagram. Here the core has just recently been regulated as a car park, with the development of pedestrian passages and core frontages at a stage of early venture. In both blocks the length of one full side, and the half lengths of two flanking sides, display characteristics of the typical original block crust between active street and developing block-core car park. Ballina, although in real time the most recent, is the most primitive, without yet any retail anchor of major floorspace.

The case studies of Roscrea and Roscommon may be identified as middle stages in the process, though with differing paths of detailed progress. Longford and Sligo, though not the most recent, represent the most reactive, and where masterplans for proposed re-development are found in these cases, the most advanced reactions to the process can be identified.
Chapter 11

Interviews

11.01.00 Introduction

Thirty interviews were carried out in order to confirm or extend the evidence already gathered from cartographic scrutiny, examination on the ground and planning files. All evidence described in previous chapters, not supported by interview references, was complete and collected before the interview stage commenced.

11.02.00 Interviewees

Interviewees were identified from the planning files of the six case studies as participants involved in issues related to the case studies. Those identified include planning officials making judgement on such files, applicants and developers, third party observers, planning consultants, traders, landowners and other users of the domain under scrutiny.

This identification yielded a first list of seventy-one potential interviewees, which was considered excessive. A process of selection was accordingly applied in order to source balanced experience. The list was first divided into three categories. The first category, of consumers in the process, included developers, landowners and their agents. Of these there were nineteen. The second category, of those who might control the process in the pursuit of common good, included local authority planners. Of these there were twenty-eight. The third category, of those described as observers of the process, included professional consultants, and registered third party participants. The number was reduced by random selection to produce ten from each category, giving a total of 30.

The attribution of weight to the responses of interviewees was considered unnecessary because of the nature of the interviewee sample. Interviewees would be identified from forum-participation rather than qualification, bound together loosely by their interest in the environment but with focus on a concept of which they might together have had a diverse range of understanding. For various reasons it would therefore be of greater interest to value their thoughts as of common base, particularly when no comparison of individual
respondents was being applied. Any attempt to apply weighting would have been difficult and could perhaps have created an unnecessary distortion.

Three pilot interviews were held initially (outside this sample) in order to guide the design of a questionnaire. Information gathered from these is not included in the final results.

11.03.00 The Interview

The semi-structured interview opens with twenty short open-ended questions (see appendix 10). Fourteen of these are used with all participants, the remainder as an addition addressing the specific expertise of some participant categories. The questions are short, designed to induce free comment, but sufficiently structured to focus this. A list of prompts is prepared for the interviewer to use if necessary with any participants. In some cases inductive reference (Rowley 2012) to previous thought on the subject is introduced. When this stage is complete, a broader discussion is then opened in order to facilitate the varied directions from which respondents see the process, sourcing this expertise.

The scope of the participant’s own observation is not under scrutiny and this is made clear to the interviewee initially. Interviewer and interviewee are together observing a third state, enhanced by the observation of the interviewee. “When two or more people discuss the meaning of an image, they try to figure out something together, which is an ideal model for research.” (Harper 2002 p23)

11.03.01 Graphic elicitation

The technique of Graphic Elicitation, sometimes referred to as graphic ideation, (Crilly et al 2006 p347) is used to aid the development of details in the perception of the process by its stakeholders. Its more common relative is the technique of Photo Elicitation.

The interview here uses map elicitation (Harper 2002, Crilly et al 2006). Two maps are placed on the table, of the Clonmel case study area (or the case study with which the interviewee is familiar), one dated 1951 (in the case of Clonmel) and the other dated 1999 (figs 1105 and 1106). Both maps are reduced to a similar format, showing only plot subdivisions, building form and retail floorspace. (Maps of alternative case-study areas used are shown in appendix 12). The maps present two stages of a process. The essence of the difference between these is questioned. From this the respondent is encouraged to reflect backwards or forwards in time, offering observations on the origins and future of the process.
1105 Clonmel 1951 (OSI) (colour shows retail floorspace)

1106 Clonmel 1999 (OSI digital)(colour shows retail floorspace)
Complex answers or statements from interviewees can often be more easily expressed with reference to images. Diagrams permit the representation of relationships and ideas that might otherwise be only vaguely understood or difficult to verbalise. (Crilly et al 2006 p350) Diagrammatic simplification facilitates contributions from interviewees by reducing a complex topic to a clear graphic abstraction around which discussion is based. (ibid 2006 p350)

As the interviews progressed it was observed that an understanding of the process varied according to the differing experience of the interviewees. When its context was identified, focussed information of immense value emerged. The focus however was in different areas for different participants, and therefore difficult to trawl in a semi-structured interview format. When the semi-structured stage, equal for all participants, was complete therefore, a number of extra diagrams were frequently included for elicitation in the subsequent free discussion stage, facilitating in many cases important additional background opinion. Elicitation in the questionnaire stage remained common for all.

Crilly, quoting Dubin 1978, concludes that “the objective of theory building is to find order in the realm of experience. Analytic diagrams may elicit comments from interviewees on the importance of not only what has been represented but also what has been omitted.” (Crilly et al 2006 p351)

11. 03. 02 Interview records

This interview did not avail of voice recording. In the initial scoping interviews it was suggested, by more than one respondent, that in the case of two major respondent groups, the nature of the respondent’s interaction with urban development was such that recording of the interview would lead to over-cautious replies. A proportion of respondents are municipal planning officials who at any rank would be reluctant to talk openly about case-specific activity. A second category, of business entrepreneurs, or the professional advisors to such clients, would also be reluctant to release the free comment which might otherwise be extracted in open discussion. If the purpose of the interview was to add informal personal experience to an already formally established knowledge base, the inhibitions created by a recording process would be counter-productive. It was decided therefore not to record, and to give an undertaking not to quote directly. Notes were taken, in bullet form, and transcribed. The interviewees are listed in appendix 12 and where their observations are discussed in text, individual attribution is not included. Headnote lists of the points raised in each interview are retained by the author and all reference to these is anonymised as described (R 00).
11.04.00 Interview Findings

Many observations which emerged from the interviews had relevance to parts of the progression already described in previous chapters and are therefore incorporated therein, as referenced. Many have in particular been incorporated into chapters 8, 9 and 10. Some are more relevant to the reflective chapters 12 and 14 where they are similarly included. The main findings are listed below in a sequence which first covers the order in which they emerged from the questionnaire, continuing with the observations generated in subsequent discussion.

Perception that the block is changing

- The block is more open than it had been.
- There is more commercial floorspace within plots than there had been.
- Shops are not just facing the street. They now face in many directions.
- The street is no longer the only place where one expects to find retail frontage.
- Upper floor activity has gone from the block.
- Retail is more successful on the ground floor than on any other level.
- There is now no common use expected for upper floors.
- Incentives to living over the shop have failed.
- All shop types are becoming larger.
- Shops are widening and deepening.
- The scale of retail activity sometimes leads to larger stock of less variety.
- The proliferation of low-rent shops in the street reflects plot size restriction.

Concern that positive benefits are not being maximised

- Regulated protection for town centres is not being maximised.
- Overall structure plans are desirable for blocks which have lost their attraction to entrepreneurs.
- Local authority participation in block core development is desirable. The most successful core developments have involved the local authority and developer in partnership.

Future consequences

Most discussion on the future focussed on solutions to immediate local problems, but some longer term strategies were mentioned.
Online shopping has had an effect on the retail interface. This originally affected convenience goods more than comparison goods but that this balance is changing. In comparison shopping now, the up-to-date range of online products is no longer matched by the stock available in the shops of smaller towns.

**Towns are losing banks and building society branches as these services no longer require physical interface.**

The ring road is now becoming the town’s main street, linking shopping centres, while the original centre attracts low-rent ‘pound’ shops.

### Ideal town centre objectives and ideal block structures

- **Active retail ground floor activity**
  - is an essential objective on streetward plots.
- **A town centre should have**
  - a car park, a convenience anchor, mid-sized retail units capable of including branch multi-nationals, and smaller specialist shops.
- **Convenience goods shops should ideally link to the car park.**
- **Comparison goods shops should ideally front to the street.**
- The ideal total length of retail frontage for different town sizes would be valuable as a planning resource.
- **Apartments at an upper level, anywhere in the block core, are essential,** maintaining shops around the ground floor edge fronting to the street.
- **A block core car park, at any level, should have its pedestrian exit to the street,** before connecting with any shops.
- **Pedestrian passages should be outdoor and accessible for twenty four hours to allow customer and retailer to have freedom of access.**

### Current regulations

- Although not yet addressed by regulation, the frontage rights of a landowner/retailer to trade over a plot-tail frontage line to a core car park would be easily established, particularly if the local authority had invested in the car park with footpaths and lighting, thus recognising it as public realm and more particularly so if, in granting to the landowner the right to open frontage to the core, the authority had used the traders development contribution, as would be implied, towards such development. *(An appropriately qualified interviewee (R03))*
- **Regulations tend on occasion to be treated leniently by planning authorities in heritage towns in response to the promise of development.*
Recognisable frontage of town

There were many different and opposite opinions recorded from interviewees on the relationship between front and back in an inverted block structure.

- The street is always readable as front.
- Townspeople regard any frontage as a front.
- The streetward facade is still perceived as the social front.
- Identity between front and back in the block crust is not important for the typical user.
- In a straight-through shop, with no service zone, back and front can be confused. There is no distinction between the front and any back end. With the elimination of the yard, an internalisation of space is taking place over the total plot.
- A feeling of spaciousness in the car park is attractive.
- The block-core space is a calm space, different to the bustle of the street and perhaps suitable for outdoor restaurant seating.
- The central block space is a square within the realm of the street, meriting similar architectural treatment. Upper floor residences should have the amenity of facing the square as an attractive space. Apartments in such location sometimes sell easily with the core marketed as an emerging civic space, quieter than the street.
- Facades facing the core are facing the back and do not merit frontal design.
- Block core ground, even when surrounded by retail frontage, is still backland. This perception does influence user expectation.
- The car park is associated with retail fringe services. One would expect to find farmers markets, greengrocery stalls or carwash here.
- Land values are highest on the car park edge behind areas of locally active street.

Car parking

- Continued use of the private car in some form is inevitable for short individual journeys in and around the small town. Accommodation of the car must therefore continue.
- Proximity to the car park is the principal generator of retail business.
- A clear readable location of the car park is important for the user, and a surface car park with the car visible is optimum.
• Convenience stores as tenants often demand from developers some surface car parking space.
• Developers favour a surface car park as ideal, followed by multi-storey parking, followed by underground options.
• Free car parking is a strong customer attractor.
• Free parking attracts long term parking, which reduces availability.
• If parking is free on the edge of town and charged in the centre, users will not be attracted to the centre. Most out-of-town shopping centres have free car parking.
• Developers are seldom dependant on car park revenue, but happy to receive it.
• Multi-storey car parks in smaller towns are continually underused.
• The location of a multi-storey car park in the centre of a block core can compromise the flexibility of other uses in the core.
• Any car parking provision serves the street. A block core car park does release car parking from the public realm of the street.
• The need for off-street car parking generates block-core car parks.
• The block-core car park is now becoming a distinct objective in most small towns, as is a facility for shops opening to it.
• Where the town has a number of block-core car parks each core has a locally-serving parking demand. Users will frequently drive from core to core to visit different shops, across very short distances.
• In-plot customer car parking is controllable only in small business, where the trader knows the customer.
• In the Ballina case study block, the application for a McDonald’s fast-food outlet was walled from the remainder of the block in order to avoid associated activity across the block core, with potential accident-risk claims. McDonald’s now observes that the majority of its customers are family groups. For this reason, in smaller towns, the drive-in or road-serving location has taken over entirely from the urban-street location. The family car close-by is therefore regarded as an essential convenience. Only in larger towns are non-family customers sufficiently numerous to support urban outlets without an adjacent car park.

Retail aspects

• Urban renewal incentives in late 1980s did pull supermarket anchors into town centres at a time when in other countries they went outwards. But planning pressure
has eased in more recent years and some second generation anchors have moved outwards.

- Tesco in some towns has adjusted to the separation of ranks of demand in convenience shopping, separating the large car-dependent visit from the basket-shop city centre visit. The ideal Tesco is now a Tesco Metro or Express.
- M+S Simply Food is responding to this same rising market as Tesco Metro.
- In smaller towns the large convenience store is still the primary anchor of the shopping visit.
- There has been a recent growth in ‘portfolio shopping’ where the convenience goods customer now shops weekly from a number of supermarkets, led by price and quality difference.
- Most towns have too many small units, (classified as under 100m2).
- Where the block core is occupied by a car-park, developers find it difficult to assemble larger sized retail floorplates on the block perimeter between street edge and car-park edge.
- Advances in storage procedures and off-plot service patterns have made smaller town centre plots more workable. However, service access to convenience stores still has a large land requirement. Conflict between delivery vehicle activity and surrounding land uses is common.
- A developer of retail space will generally provide for flexibility in subdivision leaving scope for variable options.
- Developers generally like to retain scheme ownership, leasing to individual retail users in order to maintain control.
- Shopping centres now frequently change overall ownership.

**Strategic factors**

- The rank and size of a town creates an important image for the way people expect to use it.
- A town needs a 20,000 population catchment to be perceived as a viable service centre.
- Hinterland spending power is critical in attracting national-chain retailers.
- There are too many towns for a population that has become car-borne. The Longford location is barely strong enough for some ranks of comparison shopping as alternative towns of similar or greater rank are easily reachable.
Site values around core car parks exceed the typical value of ground floor retail space on streets.

**User behaviour**

- Car-based user expectations continue to lead the form of towns.
- The user likes the car on the surface and the shop on the ground.
- Users enjoy the traditional street but also the convenience of the car park.
- Proximity of the car to convenience shopping is desirable.

**11. 05. 00 Conclusion**

The interviews produced many individually valuable insights from the ground which make sense of particular observations made by this work elsewhere. It also produced many observations not otherwise tapped which helped to focus attention on the analysis of applied practice. Findings from the interviews are now distributed throughout the text.

Particular respondent groups did display particular clustered opinions but it was not the intention of the survey to isolate or compare these. Further research could do so, using the raw data of the interview headnotes (in anonymised form). For the purpose of the work in hand however that is not considered essential.
Chapter 12

The wider theoretical context

12.01.00 Introduction

At this stage a physical progression has been identified and tracked, revealing the forces that create and influence it. The extent of its distribution among towns has been plotted and evidence of its emerging effect has been gathered. Before this evidence is finally laid out however, its relationship to a wider theoretical context merits consideration.

The emergence of a public space type in a block core, out of contact with the established frontage of streets and squares, creating a competing frontage for the user, prompts one to consider corresponding principles in classical urban design.

The fact that such frontage is led by an off-street car park leads one to review the influence of the car as a form-changing force on the layout principles of the town. The inversion of market frontage from block edge to block core touches important principles in the readability of the town, in the block as organiser. The fundamental relationship between front and back is challenged.

From the evidence assembled, the long-established relationship between plot and street with rectangularity and clear lines of contact, in an adaptable structure, appears now also to have changed. This chapter reviews theory surrounding such change.

12.01.01 Historic Public Realm in the Block Core

The concept of a public realm focussed on the block-core is of course common in the layout of pedestrian shopping malls, but is also found in the historic form of early modern cities as formal off-street urban space. In some cases, and particularly in Spain, a separate square can occur within a block without conspicuous connection to the street system. Plaza Mayor, Madrid (figs 1210,1211) or Plaza Mayor, Salamanca (fig 1212,) provide examples of this concept. These are closed self-contained squares, but more importantly, they sit in the core of otherwise building-filled blocks, not as incidental spaces in the street framework. One must pass under the built edge of the street to get to them.
In search of the origin of this space-type however, any attempt to identify a common leading design concept falters, because historically each of these squares has a different origin (Escobar, 2004). Only the architectural vision brings about a similar form. These examples
show no relationship to the back of plots in the surrounding streets. In fact Plaza Mayor in Madrid has a knife-edge ridgeline boundary with no acknowledgement of adjoining functions outside the view from the rectangle which it occupies (fig 1214).

These squares also have, as a common feature, an arcade around their internal edges on to which small shops trade. This provides a unifying identity deliberately defining or secluding the space from its surroundings. A similar, though theoretically different, core block square is Plaza Real in Barcelona, similar in form to the examples above, different because it has a single street connection with the block perimeter (fig 1216), bringing it closer to the core spaces of the Irish case studies.

A number of interviewees (R07, R09) confirm that, in the case of new block core spaces in Ireland, the future vision of the ideal form, as imagined by its users, is that of a separately-
addressed square, thus similar in form to the above spaces, experienced as part of the public realm of streets. Original nineteenth century off-street market spaces such as that at Tullamore (fig 1218) represent an early prototype, with some similar constituents to those of the process outlined in Chapter 8.

1248 Original block-core Market-Square in Tullamore (OSI1911)

Although the re-planning of the Longford case study block (Stage 27) assigned almost all of its parking to multi-storey space, a small surface car park was still retained in the centre, presumably to leave an easily-read understanding of its part in the public realm. Perhaps this was necessary to wean the public mind slowly off such an understanding, respecting the permanence of its origin. On National Culture Night in Sligo, 2016, a project was staged re-imagining core car parks as city spaces or parks in an interesting alternative perception of the spaces, in this case without reference to the parking function responsible for their need or creation.

12. 01. 02 Park-and-Shop

Evidence of the progressive off-street repositioning of the retail interface in Irish towns opens an interesting comparison with the similar progression of the retail interface in the USA, over a slightly different time span but under similar forces. The history (Longstreth 1999) of drive-in commercial retailing in the United States is particularly relevant. Many of the components which gathered to become the drive-in markets of Los Angeles in the 1920s are perhaps recognisable among those attractors which give rise to the inverted block of the Irish case
studies. The component common to both is the automobile of the buyer, surrounded as closely as possible on all sides by the shops of the seller (fig 1220).

Longstreth concludes that in the early years of the automobile, its place, in the mind of the user, was always on the street. All retail frontage presented trade to the buyer on the street, whether to vehicle or pedestrian. It appears to have taken some time for even the filling station forecourt to step back from the line of the street to accommodate the off-street sale of petrol (Longstreth 1999, p7). Evidence from our case studies shows that, in the early twentieth century, petrol pumps in Ireland were generally located on the edges of street footpaths alongside which cars drew up to fill, the service station façade being placed at back-of-pavement in line with adjacent shops (fig 1221 ) (Athlone, Sligo, Gorey).
Longstreth (1999, p7) also suggests that, in the perception of the user, the line of buildings which formed the edge of the street formed “a connective wall that distinguished private from public realm”. The activity of the car as public traffic was not expected to cross this line. Once however the forecourt was invented to serve the filling station, the idea of its use for other off-street customer loading functions associated with the car quickly developed. In the development of the supermarket, where low prices were achieved by selling in quantity, the presence of a car close-by was necessary to carry this quantity away. From this the essential association between the convenience store and the car park developed (ibid 1999, p80). Longstreth observes however that when the parking lot became a necessity, the early supermarket still placed itself on the street frontage of its site, with car park to the side or the back, believing that this back-of-pavement presentation to the street was still an important factor in its visibility.

The drive-in market (fig 1220), precursor of the supermarket, offered to the purchaser the facility to park close to the store counter, in an area which was not the public street but a slower place in transition between street and shop interior. In Ireland the typical central car park of an inverted block, such as that found at Longford or Mallow, displays many of the ingredients of an urban space typology which could just as easily belong to a drive-in market in Los Angeles.

Ralph’s Supermarket stores of the late 1930s in the USA began to select a form which, though having an important façade to the street, had its main façade facing the car park, where the main exit and its checkouts were located (fig 1224). In fact at this stage all sides of the building became important as the supermarket became freestanding (Longstreth 1999, p116).
The early relationship between the frontal car park and the drive-in shopping market however showed an underestimation of the scale of increased activity, where the car parking space served a number of shops on visits of varying duration. It was common for such centres to have grossly inadequate provision for parking (ibid, p147). The design philosophy of typical frontal space addressed by shops was also confused. Some schemes treated this as a village square, with space for a limited number of cars which was soon inadequate, though repeated blindly in many subsequent designs. Here the car park was tightly surrounded by retail frontage, limiting its capability to expand (fig 1225), exactly as in the Irish block core (8.07.01).
The important connection between Longstreth and the Irish evidence is that the first stages of block inversion in the Irish block respond to the same signals as those which generated the drive-in market in 1920 Los Angeles. The ultimate layout efficiencies which both pursue would seek the same ideal form, while along the way they would experience identical difficulties.

12. 01. 03  Early Instance of Planned Block Inversion in the USA

A plan (fig 1240) was formulated in 1940 by the Hollywood Chamber of Commerce to manage competitive cheap car parking which would attract shoppers back into downtown Los Angeles from suburban shopping centres (Longstreth 1997 p100). In its physical form the plan has components which, to our evidence, are very familiar. It proposed to link a series of block core spaces at the rear of street-fronting plots to form in combination a critical mass of car parking, from which all of the plots could benefit. Interestingly it also proposed that some of the street-fronting buildings might also open rear frontages to the parking lot. The plan was never implemented, apparently because not all of the lot owners were in full agreement.

1240  Proposed block-core parking lot, Los Angeles 1940
12. 02. 00 Front and back

From the evidence of the metamorphosis outlined in chapter 8, one could conclude that the originally clear relationship between street and block has been changed, in the invasion of block by street-space, reducing the readability of the town. Arguably the most fundamental understanding upset in this invasion is the distinction between front and back. This distinction therefore merits consideration in theoretical perspective, in the context of market interface, of public and private, user-security and of the transects governing these.

12. 02. 01 Town as market interface

For centuries the street has been the primary distribution vein in the market town as a readable spatial interface between seller and buyer (fig 1259). This interface led the form of the Irish town for thousands of years until the 1960s.

Since then has it been evolving towards something different. Lefebvre (1991 p73) considers a city to be a space which is fashioned, shaped and invested by social activities during a finite historical period. It could be suggested that the same thinking applies to its parts individually and that historical periods overlap to varying degrees. In Ireland the increased affluence of a rural-loving society, increased use of the car, the resultant diffusion of residence into the countryside and the change in scale of retail distribution, have changed the way in which the individual uses the town (chapter 8). The town as a market interface is
being reshaped in its response to this use. The shifting line of frontage in this response prompts reflection.

12. 02. 02 Figurative participation of the trading plot

The street is a forum for contact and presentation. Presentation is about front. The existence of front implies the corresponding existence of back. It has been suggested that all architecture is organised according to an elemental language of basic bodily experiences (Taylor 1992, Otero-Pailos 2012 p148). The layout of plot and town could be taken to illustrate this association. One could describe the presentation of a plot to the street or to the public realm as figurative morphology in that it represents the position of the individual retailer, trading with, or in conversation with, the street. In this relationship frontage is key. The town is in its simplest form a market space surrounded by a circle of attentive plots.

The ideal market might be described as a group of traders standing in a circle, with the customer in the centre (fig 1260). Since however market profile requires continuous passage of customers, the circle splits into semi-circles (fig 1261), to allow through passage. Hence the two-sided market space becomes the street (fig 1262). The street will thus be reflective in form, equal on both sides. In time, the standing traders become stalls and the stalls become buildings, to define a permanent street. As humans do, the buildings stand shoulder to shoulder, presenting their profile to the street, using to maximum advantage the frontage line which they define between the private seller and the public market (fig 1266), or the line between the individual participant and the city. Front and back have critical roles in this relationship. The front will present, the back will prepare or support. The plot will address its subject in a direction.
12.02.03 Private and public activity

Backs by definition contain the private activities of a plot. Private activities are those which it is inappropriate to carry out in public (Bentley 1999 p183). The socially constructed distinction between front and back is vital in establishing conditions of privacy (Carmona et al 2003 p68, Vis 2018 p112). In almost all cultures buildings contain some areas of private activity (Bentley 1999 p183). Sennett acknowledges the private space as that in which the individual is natural, implying that in public the individual is staged, or artificial, being controlled by self-conscious role or behaviour (Sennett 1977 p67). The building façade might be seen as the mask (Shane 2005 p147) behind which the individual, in the privacy of the plot, is natural, in front of which the individual is embellished in public performance.

Public space is frequently seen as stage (Sennett 1977 p115), with the individual as actor, where the relationship between the individual and society is played out (ibid 1977 p38). As in theatre however the stage cannot deliver without an attendant backstage.
Commercially, in a town of retail plots the back-of-plot offers a private preparation space for the frontal presentation, which applies at a series of scales. In the restaurant, or the flower shop, or the grocery store, a series of boxing or preparation spaces, which do not concern the customer, form the private extremity of the transect between public and private. It should follow that in any business the adequacy or inadequacy of this service space invariably affects the quality of the frontstage product.

12. 02. 04 The concept of frontage

The traditional plot made its controlled presentation to the town through its façade, its facade coordinated with other facades to define and enhance public space. Blank party walls between adjacent plots ensured that the plot would not be called upon to face the town in any other direction. This discipline, with a collective set of rules, gave the benefit of certainty, or stability of context, to all participating plots (Carmona et al 2003 p68). Bentley (1999 p214) has developed the positive privacy gradient (fig 126) which illustrates, in the interface of a street-facing building, the gradation from public to private as one goes either upward or backward from this interface.

1268 The positive privacy gradient
(After Bentley, I., 1999 p214)

This typical gradation may be read through the internal plan of any street-facing building, with good rooms to the front and service spaces to the rear (fig 1269). The plot presents its boundary to the street with embellished exposure, receding backwards through degrees of contact, to a state of concealed undecorated privacy at the back end.
In the eighteenth-century Irish town house, the ceiling of the first-floor front room, as the most visible plane of the interior, was lavishly decorated to be admired by viewers in the street below. A building front, where it makes contact with the street or public domain, often the only painted façade (fig 1271), is expected to be designed to please. Its back which faces the service yard is accepted to be less so. If one finds the reverse to be the case, one is confused. Building parts can be identified as background or foreground in nature as can the functions which occupy them (Kelbaugh 1996 p49).
Within the social transect, back of course offers a quiet alternative to front, inducing seclusion and protection from the activity of front, being out of public scrutiny and its attendant obligations. The distinction between front and back is an important indicator of this psychological alternative (Alexander 1977 p302, Hillier and Hanson 1984 p160). The distinction might in fact be implied by established layout, with no need for a line defining one from the other (Lefebvre 1991 p314). Borden (2000 p240) defines modern urban boundaries not as thin definitive lines but as thick edges, where uses in each side unfold and connect. The soft nature of such interface is also seen as important by Gehl (2001, p185) when contact, between interior and exterior, needs to be enhanced, opened or experienced as a continuous space. In the front of the plot, this is the critical connector between the individual and the public realm.

12.02.05 Urban form and arterial structure; the swapping of front and back

Evidence from our research suggests that the road access system in and out of the town centre now tends to seek contact with the rear of the block rather than with the street. In the ultimate state of this current morphogenesis, the town might be edged with a series of terminal car-focussed parking lots on to which the rear sides of the original street-facing buildings now front, the original street facades having less importance. In the towns which have, in their view, ‘achieved’ the connection, the ideal core car park is now reached from an arterial road, with an access that is as close to the primary distributor as possible. This accords closely with the original Buchanan ideal, as shown particularly in Buchanan’s proposal for Newbury (MoT 1963, p75,) (our fig 1281).

1281 (After Buchanan 1963 p75)
It is interesting to reflect on how a town progresses to this state. An attempt is made to summarise the theory of such progression in fig.1282. In the beginning (1282 a) the town formed, or clustered, around a route. This route defined a street of focal significance which in turn attracted important components of the town to the route (Cahill 1980 p27, Marshall 2005 p4). In time the importance of the route however attracted increased traffic and became congested.

1282 Block Inversion and Urban Diffusion

In an attempt to ease congestion, the traffic activity of the route was lifted out of the street to circulate unhindered, with greater speed around the perimeter of the town (1282 b). This however left the street as backwater space with only an access role. Marshall (2005 p6) describes this as the filleting of the city, removing from the street the importance of its backbone or original purpose, now using its place as space alone. The relationship between route and town was being turned inside out, in a form of inversion. Streets had by implication become part of the access layer of the roads hierarchy (Marshall 2005 p185); a layer which is functionally remote from rank or importance.

However, as is evident from our findings, the desired interface between user access and the street persists. The private car still attempts to get the user as close to the central street as possible within the arterial access system. This access system pressing inwards by the path
of least resistance finds a way through the redundant back-lands of streetward plots, albeit within the minor final twigs of its access hierarchy. The road now reaches the innermost terminus of the access system at the rear of the block and a reaction between it and the street now develops in a back-to-front re-allocation (1282 c).

From here, the pedestrian, to finally reach the street space, finds paths through the built mass of the street perimeter from the back to the front. In response, the frontage retail activity of the street begins to seep through the built mass to make more immediate contact with the customer at the car park side, eventually turning the streetward buildings back to front. The connection between the final access point of the car and the social space of the pedestrian now takes place around the edge of the car park (1282 d). Movement and place are re-united, but not in the street. The elements of the city which had been deconstructed (Marshall 2005, p7) have been somewhat pulled together, but this time in open space.

Now however with increased use, the core car park becomes in turn congested (1282 d), as did the street at the beginning of the process. In response, a re-run of the Buchanan model occurs at a larger scale. This time the core space, complete with its retail edge and distributor terminus, moves outward to the urban fringe, its deconstructed parts now to be accessible directly from the motorway (1282 e). The typical Retail Park, for example, might now be seen to represent a relocated alternative to what is left of the town as a market centre.
Inversion of route status in modern structure (right) as distinct from historic structure (left)

If from Marshall's diagram 7.18 (2004, p183) (our fig 1284) we bring section a and section b (rotated) together as fig. 1285, the social core of the original town inverts across the perimeter block to occupy the final penetration of the road system. The inversion is a counter reaction to the divergence under which these two elements have been separated in importance.

1285  (Taking diagrams from fig. 1284 in combination)
In A, existing built fabric forms a barrier between the original centre and access to it

In B, This fabric thus inverts to address the car park at final terminus of access system.

If the street space is not large enough to accommodate the terminus of the access system, the fabric will invert to connect with this on the closest available land.

Only in the case of very small towns will the traditional street accommodate the terminus. Templemore (fig.1287) is an example.
Buchanan’s separation of mobility and access was a separation of roads and streets (Marshall 2005 p50), a separation of back and front or a swapping of them. The new car park is neither road nor street but a contact zone. In movement it is a cul-de-sac. In activity, as a consequence, it is a self-limiting terminus, perhaps repeated in a number of instances around the edge of the urban core, each cut off from the others by residual urban form.

Modern retail outlet types tend to present themselves to the customer individually in order to achieve defined market identity (R01,R16). The convenience store, a compulsory destination with the emerging character of a warehouse, attracts a visit which is different in experience to that of a visit to the traditional street of comparison shops. In its response to the car-borne visitor therefore the traditional street may tend to present itself as a distinct comparison shopping cluster, within the repertoire of separate experiences reached from the car. In this it might assume a place of distinct separate interface in the common Duany diagram (fig 1290), entered from an individual parking lot, uncoupled from other urban attractors, and devoid of any central significance.
However, such fragmentation occurs perhaps only if the metropolitan settlement is large enough to induce a spatial model of such scatter. In smaller settlements, all of these elements may remain together, to be reached from a single parking incident.

12. 03. 00  *Change over time, succession in the artefact*

‘Urban order must be allowed space and time to unfold gradually, to grow and evolve, to mature and to settle. Hence the need for a time consciousness in urban design’ (Thwaites, Porta, Romice, Greaves 2007 p9). Form is the result of process (Kropf 2011 p394). Form is presumably generated over time in this process. The residue from the process of one period is often carried through to adapt to later processes. Rossi talks about the natural succession of artefacts, and the phenomenon of obsolescence where transitional areas of the city become urban artefacts because they have outlived the dynamics of land use in the surrounding area (Rossi 1982 p96).

The relevance of this theory within the morphogenesis now discovered in the Irish block is interesting. The core of the block contains the flexible extremity of the plot, whose intensity of use varies according to its requirement to serve the frontage of the plot. In its natural succession it can become periodically obsolete. However, the most redundant element of a declining phase may become the focus of a subsequent phase, because of its availability (Torma, Griffiths and Vaughan 2017 p7). In the Irish plot the back garden has receded and the car park demand has advanced. Both of these are related to the changing demands of
the town’s use, or as consequence, to changing roles of the components of the town in response to this use.

### 12. 03. 01 Stable edge lines

‘The built environment adapts to changing socio-economic conditions by maintaining a balance between the stability of the street network over time and a degree of adaptability in the shape and pattern of buildings themselves’ (Vaughan 2015 p4). A map of the Longford case-study block showing the buildings or ground surfaces in existence in 2011 (fig.1373), might illustrate the theory (Conzen 1988 p255) that firstly the town plan with its original streets, and secondly the original buildings around the block perimeter, have a persistence that is absent in the remainder of the block core. In this particular case, the core has changed more than once during the short period addressed by our research. It may be that a shop with dual frontage which is changing for the second time to face the original street line, as a stable anchor, reflects the significance of Conzen’s theory.

### 12. 03. 02 The corridor, the room and the linear street

In suburban residential layout, a particular school of thought suggests that the cul-de-sac may have fallen out of popularity, because it imposed social isolation on residents. (Southworth and Owens, 1993, p180). The block core retail space may fail similarly because of the commercial isolation which it imposes on retailers. Each participant becomes dependent on the success of a small number of fellow participants, as in a privately-managed shopping centre. In reaction to such isolation, the retailer, like the cul-de-sac resident, returns to the street, because it offers frontage to the social and commercial passage of the city, to a lifeline of diverse activity. Perhaps it was the loss of flexibility that caused the demise of the Park-and-Shop facility (Longstreth 1999 p147), where, in an emerging market with reduced ability to forecast parking demand, the open-ended flexibility of the street was missing.

The street is a corridor carrying people between activities elsewhere and connecting with many other attractors along its route (Ministry of Transport and Buchanan 1963, p42). The city depends on the street, for contact with diversity (Vaughen 2015, p6). As a desire line the street carries a reliable stream of users. The block-core space on the other hand is a room off the corridor, a terminal space, not in contact with the desire line, but which one must have a reason to visit. Its frontages are not in passive contact with the activity of the corridor.
Because the street links to many activities, it is less dependent on the success of its individual parts, which may succeed and fail over time as a matter of course, while the reason for the existence of the street remains morphologically resilient. Streets maintain the backbone of routes which frame an urban system (Barthelemy 2017, p260). Where, as identified in stage 25 (8.07.02), a shop which is fortunate to have frontages at two opposite ends ceases to trade to a dying core car park, and instead re-addresses the street, the move recognizes the linear street as the more reliable trading frontage.

12.04.00 Conclusion

The block in its evolution brings together many forces and circumstances. The relationship between the changing retail interface of nineteen-twenties America and its parking lot followed a path of organisation which one now finds repeated almost stage by stage in the core of European towns sixty years later. The somewhat accidental block-core urban square created by this path triggers in turn a user vision (12.04) of the block-core square found in cities of Spain four hundred years earlier, having a similar spatial concept with a totally different evolution.

The block is open to many interpretations as an organiser, when and if its facility to organise is recognised. The changes which our evidence reveals appear like short progressions in time and as one compares case studies, one becomes aware of the many directions which an urban frame can take according to the physical and social tastes or inventions of its immediate time. Influences which exist at the moment the option occurs are quite obviously critical. Critical also is the nature of the urban grain and its plot structure as a facilitator of change and adjustment such as is the orthogonal grid, and the rectangle. All of these forces have overlapping relevance.

The fact that references to very different sources may be called to mind by the progression which has been observed (in chapter 8) shows how, from broader spatial theory, so many concepts may be stirred by such a fundamental pivot of organisation as the central block of a small town. As Conzen found with Alnwick, the small town as an object of study has a microcosmic relevance in the generation and application of thought to settlement of any scale.
Findings

Chapter 13

Outline of Research Findings

13.01.00 Introduction

At this stage the principal research findings are briefly outlined. Bracketed references relate to the location of such findings in the broader text. Four-digit numbers refer to diagrams, also in the broader text.

This chapter aims to lay down discoveries factually, in response to the research questions of chapter 1. Chapter 14 then attempts to conclude on their meaning, suggesting where they sit in established thought, literature and understanding.

From the initial research questions (1.03.00) the work set out to identify a process of change which was taking place in the typical urban block, to identify the forces leading this process, the recognisable objectives of such change, and whether or not block structure was being compromised by patterns of emerging use. The effects of increased scale of use on the plot as component and the block as system were also questioned.

The work sought to identify recurring patterns in this change which could be understood as a predictable sequence of stages. Where evidence of morphogenesis was identifiable in this change, the work reviewed the direction in which the settlement might be evolving as a system.

13.02.00 Discoveries in the history of the block

While the major purpose of the research was to investigate, confirm and outline the extent of the above process as subsequently described in core-chapter 8, a preparatory stage of investigation as described in chapters 4 and 5 was first carried out in order to identify as context the earlier formation or history of block structure behind the street façade. This
would establish from empirical evidence an understanding of the Irish urban block core from origin to current state exposing in particular any evidence of designed layout (1.04.00).

This appears, from available literature, to have been the first time that the plot-deep operational structure of the Irish town behind the facade, was searched, and the findings have exposed some layout systems of exceptional advancement which, it is suggested, may not previously have been observed or reviewed.

Evidence from this work now shows that in many Irish towns, structured organisation of the block was present, with identifiable principles in that organisation. On the semi-structured fringe of such, the widespread presence of informal service access systems yielded also many examples of creative arrangements (5006)(5.02.01).

Where access systems became organised some enterprising examples of such systems may be found in even small villages (5.02.02). Aclare (5007) and Courtown (5008) are examples.

Early street hierarchies, distinguishing back streets from more important streets in ‘unified ensemble’ (Haslam 2018) are extensive and it has been possible with measurement, to identify examples of this in many small towns (5.02.02) such as Moville (5011), Gorey (5185) and Mullingar (5197).

In any study of the relationship between frontal access systems, such as façade archway passages, and rear access lane structures, it might have been previously assumed that the latter systems developed over time as a reaction to the wasteful use of prime frontal space by the former. This theory however is disproven by our findings (5.02.04). Clear evidence suggests that alternative rear access systems existed at almost every stage in the development of towns. Evidence from this research points instead to the scale economies associated with plot development groupings as that which had most impact on the choice and feasibility of common rear access systems (5062).

Significant findings emerged in comparing towns from different periods of origin (12.03.02). In the earlier Norman towns, the plot and street were laid out in an inter-related system with consideration for the ideal spatial needs of each. Both public space and burgage plot formed an interactive structured system. In towns of Tudor/Stuart origin priority was given to the making of street and defensible public spaces. Plot depth filled the space left over. Here little evidence of back lanes was found although lanes perpendicular to the street sometimes served plot combinations.
In towns of the eighteenth and nineteenth centuries also, the street and public urban space appear to have given priority in a layout that would impress, also frequently assigning to the plot the space left over, whatever its shape, but in contrast to its absence in the Tudor/Stuart period, the incorporation of rear access systems in this period advanced significantly.

Examination of the 1911 OS map series has been particularly rewarding. The measurement of such details as lane frequency and plot grouping revealed many patterns (5.04.02)(5139). The association between our evidence of plot grouping in Norman towns and similar grouping in other countries such as for example in France (5147), builds on the work of Beresford (1967) and provides some leads for further work, suggesting that a significant design conversation on the layout of towns did occur around the period of Edward 1st in Britain which would merit exploration through the detailed scrutiny of artefacts at international level.

Evidence exists of a particular tendency to retro-fit rear-access systems in the mid-nineteenth century suggesting that there were perhaps incentives for this provision (5.03.02). Although from our evidence one cannot conclusively establish this, it is possible to assemble enough information to speculate (5.03.02). It would appear that regulations providing for the coverage of drainage systems may have indirectly led to the provision of the back lane. A developing fashion for the philanthropic provision of residential terraces, complete with such lanes, may also have been responsible.

Evidence of the instance and frequency of tail-seam access lanes parallel to the street (5.05.00) and access lanes perpendicular to the street (5.04.00) has been plotted perhaps for the first time in this research. In some Norman towns they are used in combination, though noticeably not in towns of Viking origin.

Access systems which distinguish inner from outer plot (5.05.01) become highly developed in the nineteenth century, including combinations which reach the inner plot from the tail seam and those which run as shared access between inner and outer plots (5.05.02), as found in meticulously worked morphotopes such as Hill Terrace, Bandon (5162) or in the allotment associations of Ballycotton (5164), Aughrim (5166) or Monasterevin (5170).

This shared access system is also found in the innovative structured planning of new-town clusters in Mayo (5.05.04) such as Charlestown (5180) and Ballaghaderreen (5181) which our research has been able to link by measured similarity to layouts of the same period in Britain such as at Harrogate (5182) and Warrington. In general the nineteenth century systems of access to inner and outer plots reflect similar developments in Britain at the same time (6.02.01). In addition to the patterns of structure, some unique examples of townscape
associated with block layout such as at Cahir (4.05.01) (4120) and Skibbereen (5177), have been revealed.

13. 03. 00 Modern block metamorphosis

Within a sample field of sixty six towns, findings have confirmed a process of modern metamorphosis suspected at the outset but previously undocumented. Early stages of this process are found cartographically while more recent stages are discovered from survey and observation.

Evidence confirms that the process has clearly identifiable patterns which repeat themselves consistently over a broad range of cases (8.05.02). In a progression induced by the provision of block-core car parking, the prominence of block core frontage over street frontage is advancing, tempting retail outlets from the block perimeter to face the core with increasing priority, the attraction to the core generated by its car park. The emergence of the car park results from the presence of derelict land previously occupied by back gardens, now redundant following the migration of residence from the upper floors of surrounding buildings. Evidence of this progression has been measured and with analysis of causes and effects, it has been possible to assemble in this work an observable chronology of thirty stages (8156).

13. 03. 01 Process of change

Census evidence has shown that in Irish towns, a significant outward migration of family residence from above the shop took place from 1966 to 1981 leaving original back gardens as redundant backlands (8.03.01). The destination of this migration varied between the suburban edge and the surrounding countryside under relatively lenient planning control on inexpensive fringe land. The new distance to town required use of the car which, in the town, generated a parking demand (8.03.02). Completing the circle, this demand attracted the transfer of redundant backlands to car parks in the centre of blocks (8070). Initially parking took place on individual plots. Soon the plots merged (8.03.03), and in many cases the municipal authority joined the merger to facilitate fully-serviced public car parks. Between 1967 and 1983, fifty eight of sixty-six sample towns acquired a public car park located in the centre of at least one block (9004).
Centre-block car parks are tending to assume value as street space, as evidenced when planning authorities begin to impose development conditions enhancing the appearance of surrounding facades which address the space (10.02.05).

Some car parks are connecting with each other to become the new frontage of the town, while the original street becomes less important (8.06.02). In some case-study examples the land value of plots facing the core car-park has been found to exceed that of plots facing the surrounding street (13.02.00). The edge of the block tends to become inward focussed with its back to the street. The emergence of a core-only shop frontage (stage 19, chapter 8, 8.05.02) which has been observed in thirty-two of sixty-six sample towns appears to be induced where the core car park provision exceeds a threshold of 200 spaces. This stage may be referred to as a stage of 'block inversion'.

In a further stage, where the process has been established for some time, parking demand in the block-core may exceed supply, leading in some towns to a state of core saturation, which subsequently results in limited parking availability (8.07.01), leading to reduced retail activity, with closures of core-facing shops (8.07.02). This stage is particularly conspicuous in three towns, and may represent a new stage of post-inversion. Twenty-one of sixty-six towns have at least one closed shop facing a core car-park (9004).

13. 04. 00 Migration of Retail Interface

The core car-park now establishes the block core as the location in which the user transfers from car mode to pedestrian mode. This modal transfer, which formerly took place within the street space, places the block core at the point of primary encounter between the user and the town, with strong commercial consequences, generating a sequential reaction in the adjustment of urban form, as retail frontage responds to this encounter.

In smaller towns the street still carries all public activity, by vehicle or pedestrian, and to this, all shops present frontage. Seventeen towns of a sample of sixty six are still of this original form. When car parking develops in the block core, with the street still competing as focus, retail frontage is induced on the route between core and street in the development of pedestrian shopping passages (8.04.00). Twenty-five towns of the sample are at various stages in this development (9004).

When, in a further phase, the street begins to lose ground to the profile of the core car park, new urban form begins to surround the car park with independent retail frontage. This
subsequently expands in scale and land use to address the car park with suburban rather than urban character (8.06.04). Approximately twenty-four towns of the sample of sixty-six have reached this phase in a period of just over forty years (13.03.01).

Off street parking demand is conspicuously evident in sixty four of sixty six sample towns. In towns below the population threshold of 5000 the level of pedestrian activity in off-street passages between car parks and existing streets (9004), is considered (R25) not yet sufficient to generate retail frontage to such passages. Statistically, retail frontage is likely to be induced on pedestrian routes between core car park and street when the car park provision exceeds 170 spaces, in a town with tax designation (9002), whose population exceeds 5000. This frontage has been induced in 35 of 66 sample towns.

The combination of convenience anchor store, with a number of specialist convenience and comparison shops, in a mall linking the car park with street, has emerged as the most common retail cluster (9004). This cluster, present in the very earliest malls, has increased in floorspace over time, but has maintained a consistent layout at various scales. The purpose-built mall is almost always indoor, therefore individually managed, serving daytime use. A similar purpose-built outdoor pedestrian street, providing 24 hour access, is popular only in larger towns, with seldom more than one example per block.

On the block perimeter the double-ended shop, with one façade to the street and another to the core car-park, is regarded by owners as an attractive low-risk investment, attracting through-passage, but not exclusively dependent on it, or on either frontage (8.05.01). This phase frequently occurs ahead of a phase where dedicated shops address pedestrian link routes, with an investment of higher risk.

The components of the town are changing under forces which are not always predictable or spatial. The new market place is online. The traditional streets of small comparison goods shops are those most affected by online shopping (11.04.00). These are also affected by the national comparison goods chains now located in larger floorplates on the perimeter of town, which are of course themselves challenged by online retail. A new recently-emerging type is the shop which forms a local collection interface for goods ordered online, which actually seeks a smaller floor area (R18). Perhaps a circle is forming here which holds new promise for the traditional street.
13. 04. 01  Distinct stages of venture

While exclusive retail frontage to the core is not prevalent in very small towns with populations of under 3500, it is also absent in large towns over a population of 20,000 (9001). In small towns its absence might be attributed to the unwillingness by retailers to risk leaving the street but in the large towns this might indicate also the perceived reliability of the street.

Observers (R17, R20) suggest that when exclusive retail frontage to the core is embarked upon, with no in-plot options, a distinct image is entered, where the core space becomes frontage space, representing a clear crossing point in the status of the space. Many towns stop short of this stage. Significantly towns which do cross the stage tend to cross it with many participants. It thus represents a threshold of scale in support or acknowledgement of the core. It also represents a point of entry to significant risk by the retailer who now trusts the sustained activity of the core. What our findings suggest is that this crossing is made in a particular category of town only, whereas in smaller towns the stage immediately preceding this is, by contrast, a distinct common halting point (9.01.01) (9001,9002,9004). For this line to be crossed, the town must reach a particular rank and the car park a particular level of activity.

Once any threshold is crossed, a sense of security is however indicated by the cluster of stages which follow and this security appears to increase with town size (9001). The relationship between the pedestrian link and the car park is particularly interesting in its sequence of development, firstly as the link awaits the development of confidence generated by a desire line, and secondly as confidence builds around its profile, once this has been established.

Stages 18, 19 and 20 (chapter 8); the opening of facades to the block core, represent a threshold of activity beyond which few plots show further significant development (fig 1101, chapter 11). It perhaps represents a goal of 'rested achievement' in the process.

New shops which develop on the out-of-town side of core car parks are almost exclusively core focussed, with single frontage (9004).
The tails of plots on the block perimeter are being severed to enhance the land quantity of block core uses, with consequent loss of support to perimeter streets (8.03.04)(8078) (8079). Where the block core has been transferred to a single public or semi-public use, such as car park, drawing on the tail-space of the surrounding plots to support this, the remaining depth of perimeter plots has in many cases been compromised. The dimension between streetward frontage and rear frontage on severed perimeter plots is now frequently insufficient, reducing the ability of such plots to develop in support of the street. The effect of this on the market competitiveness of the street is becoming evident (R07,R12).

Findings suggest that some municipal authorities encourage this severance in order to acquire as much ground as possible for the core car park on which their support is focussed. Where traditional street-fronting shops operate on traditional plots, the typical plot depth required for successful trading (R24, R25), has been identified as 40m. However the process of plot tail severance and its extent, as measured in this work for the first time, suggests that in many towns plots have been reduced well beyond their proven working depth (8.03.04).

A general increase in off-street publicly-accessible space is leading to block fragmentation. The permeable pedestrian domain of the town has increased significantly during trading hours due to the presence of double-ended shops, pedestrian shopping lanes and increased block core access. Although this represents increased permeability, it also creates new rights of way which fragment the block. The block has progressed from being a previously-secure commercial unit with a surrounding edge of public interface and a supporting core of private back-up space, to becoming instead an assembly of smaller blocks, with increased public interface, but less supporting core.

Increased scale of activity demands that the modern urban settlement accommodate a coarser grain, having a layout framework of fewer but larger plots, particularly in commercial land use. The typical block morphology of many Irish towns can actually be managed to include assembly combinations which have been shown to accommodate floorplates of increased scale.
The late nineteenth century block type (5.05.02),(5.08.01) having inner and outer plot subdivisions with intermediate access, still extant in many towns, is shown to be adjustable to a range of modern land use requirements, with adaptable access potential. There are some recent examples from our evidence of its exploration (10.03.02). The typical block has shown that it can accommodate larger floorplates in its core or outer plot (5.05.01)(1038), where unbuilt ground had existed, providing for anchor elements which, together with the smaller retail units of the block perimeter, support the town centre. Development incentives of the 1980s are found to have been responsible for the attraction of a number of larger retail floorspace units into the centres of some towns (11.04.00) (R07,R11).

The historic origin of a town is found to influence its adaptability as a commercial centre, due to the fact that towns of different periods had different design priorities affecting relationships in shape and layout between plot and street (13.02.00). Towns of Anglo-Norman origin have tended to show the greatest level of flexibility, as the plot-to-street and plot-to-plot relationships tended to be orthogonal, facilitating ease of subdivision and assembly, without excessive ground wastage. Although plot assembly may change the proportions of traditional plots, the flexible fusion of layout structure is shown to serve uses of many different scales and continue to adjust to do so, where orthogonal relationships are maintained (8.03.03). Where plot subdivisions run perpendicular to the street the process of site assembly is flexible and reversible. Where new subdivisions cross the burgages, parallel to the street, it does however become less so. In plot shape, depth is found to be more critical than width. Retailers indicate (R28) that a rectangular space with its short side to the street is easier to organise than is a rectangle with its long side as façade (11.04.00).

13. 06. 01  The responsive flexibility of urban grain

From the evidence assembled at this stage, a significant relationship can be observed between the flexibility and efficiency of blocks and the historic origin of the town in which they are located. Both Clonmel and Sligo are towns of Norman foundation. In Clonmel the case study block is inside the original walled town. In Sligo it is adjacent to the original Norman frame and inside the seventeenth-century line of fortification. Roscommon is a late Norman town while Longford is an earlier settlement extended in the Norman manner. In both of these the case study area is central, adjacent to the central spine of the town.
Roscrea has its origins around a monastic site in the sixth century and Ballina is a relatively modern town, established in the eighteenth century. In each of these the case study block is adjacent to a central street.

From our evidence one could suggest that in the planned Norman town the form of both plot and street were given individual consideration in their relationship with each other. In the very least aspect of this relationship, they had an orthogonal fit. In the early-modern classical town on the other hand the street as the primary space was designed, while the plot shape fitted into the land left over (4.05.01), (fig 4155). The street and not the plot was the layout leader.

If from chapter 9 one concludes that the original plot structure might be re-assigned most efficiently to the relationship between outer plots, supporting anchor floorspace, and inner plots, supporting traditional street units (5.05.01) (09.03.02), and to this one adds the observation from case studies, Roscommon and Longford emerge as most successful while Roscrea and Ballina show uncoupled or absent anchors. If we compare the plot morphology of the first pair with that of the second pair, the absence of right angles in the second pair is conspicuous. From this and the case studies above we can thus conclude that towns of differing historical origins have differing capabilities to incorporate new development.

13. 06. 02 Block as Transect

Blocks which are located on the interface between centre and edge are found to bear a common cross-section which merges the form of the urban centre with its suburban edge (10.04.01). In this the edge function of each side responds to the individual activity of each perimeter street in the manner of a distinct half-block. The block core acts as a buffer between such half-block edges. Fringe blocks thus create new transitional core spaces fronted by differing use combinations on inner and outer sides. The block core car-park has been found to work acceptably (1045) in a block of such location. This is the ideal position where the user transfers from car to foot. In a larger town where a core car park is surrounded by built fabric, having a deeper location in the town, it works less effectively.

13. 06. 03 Plot Transect

The traditional retail transect, from public front to private back, through the depth of a typical plot, has become less significant in town centres. It has been replaced by internal shop
layout arrangements which maximise customer contact throughout ground level on valuable town-centre floorspace. Counter-protected space in typical shop layout has become less common while in-store storage space has also been reduced, supported by just-in-time delivery and off-floor service patterns in support of flexible internal layout (R01,R07,R14). By removing direction and frontage from trading, these trends may encourage the double-ended shop.

13. 07. 00 Development Management

No evidence was found of protection for the role of block core as service support to block perimeter in development plans or development management. A number of municipal authorities have actively encouraged investment in block-core surface car parks (10.03.01) (9004). Some indicated that they have no objection in principle to the development of retail frontage to car parks. They encourage it in order to extend and enliven the public domain. Municipal authority investment in a core car park has been found in 80% of sample towns. At least one public block-core car park exists in 55 of 66 sample towns. The introduction of a public car park has been assumed (R18,R21,R24) to increase retail activity in surrounding streets. No evidence has been found however to prove that retail frontage to the car park contributes to this increase.

In the assessment of planning proposals many municipal authorities use a checklist approach (10.02.01) which misses the opportunity to consider broader effects or longer term change in the operational structure of a town. The process of box-ticking in development management may inform a decision, local in time and place, but fail to notice an evolving trend induced by the collective activity of different interventions.

In some development plans, land use zoning is carried out block by block, the zone boundary running on the street centre-line. This choice of boundary position implies that the block, rather than the street is regarded as the tissue of focus (R06,R19).

In just three cases where authorities have noticed the emergence of core congestion or saturation, case-specific plans have been commissioned to collect or recover piecemeal development in favour of a process of planned structure (8151,8152). The most common component of such plans tends to include a proposal to expand the capacity of the car park facility to multi-level structure, on or close to the existing location.

It has been shown that in towns below a certain threshold of activity (9.02.00), on-site car
parking is commonly required as a planning condition instead of the option to contribute to public parking provision (10.02.03). In a number of cases this has been shown to result in the loss of proposed floorspace on high street plots.

Fire regulations have encouraged the double-ended shop (10.02.02). Fire regulations have also reduced the feasibility of upper floor residential use in buildings of traditional construction. Both of these conditions represent indirect stages towards block inversion.

13. 07. 01 Strategic policy in Urban Design

The absence of distinct urban design strategy becomes evident in the towns studied. This absence has distinct levels which vary according to the rank of towns examined but is discernible across the six outlined as case studies.

In Roscrea or Roscommon which are the smallest towns, awareness of urban design seems to relate to the details of building or space. The physical form of emerging architecture and its synthesis with context is appropriately assessed only in the development management process. The design of signage and the architectural language of infill facades generate the main considerations. Policy is applied passively, when activated by private development proposals.

In most of the towns examined, guidelines on creative urban design are absent. Almost every county has published a design guide for rural housing but few have design guides for towns, beyond dimensional regulations for infrastructure.

Within the case study towns, evidence of strategic urban design exists at the scale of the total block for the largest three towns. However strategic urban design at the scale of the total town or even at the scale of the town centre is still not evident.

At the scale of the block, problem sites or “opportunity sites” appear to be the generator of specific urban design intervention, where generally consultants are employed on a specific problem solving brief. The block plans for Longford and Sligo (8151, 8152) are examples, as is an earlier plan for Clonmel which proposed a multi-storey car park in the core. There is however evidence that the objective of such intervention is purely that of attracting developers. Among the towns in our sample all urban design strategies were found to be locally physical although some of the analyses included a review of the overall town as context.
Clonmel and Sligo have both introduced pedestrianisation and traffic calming and indeed it might be argued that in the case of each, such measures have in fact been facilitated by block inversion, which has halted traffic short of central streets.

Specific town centre management is evident in the larger cities such as Dublin, Cork and Limerick, above the level of the case study towns. In the study towns, initiatives such as traffic calming and pedestrianisation are prompted by local spatial opportunity, generally introduced by planners with enhancement of the public realm as objective. The concept of business improvement district has in more than one instance been applied to a perimeter office park, within a job creation agenda, often supporting a counter attraction to the town centre.

13. 08. 00 Methodology

While the research method in this work extracted the evidence which it was assigned to extract, it also provided evidence of its own use, bringing together as it did disciplines which had not previously conversed (3.02.00). Study of the chronology of plot-specific land use activity in order to trace collective morphological change in the operational structure of a town did not have an established literature.

Cartographic regression, being an established research method in urban morphology (Denscombe 1998, Gaskell 2000, Kropf 2011), was used to establish baseline evidence. In combination with this the timeline comparison developed in order to identify comparable sequential processes across a range of diverse settlements used techniques more often found in dendrochronological analysis (Douglass 1914). These corroborating sources provided fixes in a sequential triangulation that is innovative in its combination. Use of planning files to gain access to stakeholders in order to trace evidence of aspirations or compromise, explaining resultant form on the ground, provided an overview. The use of stakeholder interviews, engaging techniques of graphic elicitation (Crilly 2006), combined methods not often used together identifying fields of common change among sample towns.

While towns as settlements have similarities they have a broad variety of forms. The search for consistencies which would yield sufficient evidence of pattern thus proved challenging. The use of cross-matching principles, as applied in dendrochronological analysis, to trace overlaps in patterns of urban development, is new but with some scoping at the outset was found to expose valuable evidence. Experience showed that for this evidence to be robust
and measurable, the sample needed to be large, as it was in this case. The success of this application prompts further exploration in research which would attempt to trace congruence in paths where individual components of development are of similar chronological association but not specifically contemporaneous.

As the findings were explored in diagrams, the systems diagram of chapter nine (9020) (9.03.01) proved particularly useful as a graphic organiser for the sorting of interactive paths of influence. While it was developed for the illustration of this work, this diagram does suggest itself as an effective instrument of representation for various similar fields where emerging paths of thought require a tracing of interactive influence such as one often seeks in planning, morphology or the analysis of spatial formation.
While chapter thirteen has laid out the factual findings, this chapter now addresses the meaning of such findings within and beyond existing scholarship. Bracketed references continue to relate to the location of such findings in the broader text.

Evidence has been unearthed of a process which the work has described as block inversion. This evidence, not previously flagged, adds scholarship to a relatively unexplored segment of literature on the modern evolution of the town. This work has exposed a substantive change taking place between the public realm of street and the retail frontage of plot in the typical block structure of the small town.

Birkhamshaw and Whitehand (2012) observed that ground plan provides a frame for pattern of land utilisation and building type. Bradley (2000) had suggested that in a traditional linear street the ground plan had two primary components; street and plot. These had a consistently regular and readable interface, with flexibility in length of street and depth of plot. Our discoveries now show a significant weakening of that simple ground plan by the creation of competing forms within it (13.03.01).

In Conzen’s (1960) burgage-cycle theory (2.02.00), the relationship between street and plot across the interface was maintained throughout the cycle. Through the chokepoint and subsequent clearance, only the scale, or the grain under which the frame was filled, changed, with no alteration to the readable plot-to-street interface.

Conzen illustrated how at Alnwick the progression which he observed was rooted in social change which re-assigned the existing fabric, rendering obsolete the excessive land-use parcellation on the smaller burgage yards, promoting their progression to larger units of land (Conzen p94) (2.02.00). In this progression, all parts of the block and all parts of the plot maintained the same positions relative to each other. The plot still addressed the street. With block inversion however these consistencies change totally (fig.1401).
14. 01. 02   The readable interface

When the interface as a constant is reduced or removed, the absence of a stable reference leads to operational and psychological voids, reminiscent of the rejection of the street by Le Corbusier, 1925 in the early years of the modern movement (Broadbent 1990), a rejection which was subsequently challenged by many (Jacobs 1961, Newman 1972, Cahill 1980). The significance of the street edge as readable interface between the seller and the buyer, now respected as essential (Sennet 1997, Bentley 1985, 1999, Gehl 2001, Shane 2005), is however facing suppression in the change which the evidence from this work uncovers. In former times the simple distinction between front and back, public realm and service space, was defined by organised signals which were clearly and essentially understood by all participants (Alexander 1977, Hillier and Hanson 1984, Lefevbre 1991)(12.02.03).

Our findings now suggest that block inversion distorts readability in the difference between front and back or between public and private under the rules of how a town is understood by the user (12.02.02).

14. 01. 03   The core consumes the block

Siskna (1988) in his study of the urban grid block and the facility of its subdivision, addresses the clarity of two associated relationships, of the plot in the block and the block in the street. The block may be seen as a square of built form sub-divisible in orthogonal
directions into simple rectangles serving the surrounding streets (2.08.00). Our findings now discover the arrival of a third element in the form of a permanent rigid central void as spoiler in the inverted block.

This void establishes a permanent edge-line of limitation between it and the surrounding plots, restricting the space left to plots between void and street. When, as a further limitation, this new line is placed to favour the needs of the inner void rather than the outer solid the consumption is emphasised (8.03.04).

The solid block has been reduced to a perimeter block with a resulting limitation on the flexibility identified as essential by Siskna. The original block of freely sub-divisible solid, becomes now an edge form having its inner side fixed by a block-core void.

The argument by Kropf (2006) against the perimeter block is not as much about the form of the block as it is about the loss of plot depth to the street on each of the supporting sides (2.09.00). In the similar transect from centre line of street to centre point of inverting block, the loss of plot depth is critical. Porta and Romice (2010) had illustrated the plot as the flexible component of urban seeding within the block (02.07.00). When the perimeter plot loses its depth as back-up, its ability to have individual flexibility is lost.

The emerging counter-reaction of recent decades to the excessive permeability of the urban block (Vialard 2012, Sevtsuk 2016) (2.11.00) is timely in the context of these findings. The ultimate state of over-permeability occurs where a street-space enters the block-core with greater focal value than the surrounding street, consuming the block from within. The findings from this work, illustrating the progression of, and ultimate disadvantages of, such state, add further reason to view the total block as an essential component of necessary scale, to be retained intact.

14. 01. 04  The car and the shop

Buchanan (1963) introduced the pedestrianised street, as credited by Hall (1975), and in doing so separated the parked car from the shop entrance, an adjacency that had been favourably developing for the user throughout the first half of the twentieth century (8.02.03), but, as the planner knows, could never have been maintained under increased scale of use. Under such increase, saturation, which Longstreth illustrated from the USA in the 1920s (12.01.02) would invariably occur, as now confirmed in our findings, particularly where scale of use increases in a space that is non-linear, without open ends. The findings of this work suggest that it is the out-of-control attempt to increase scale of use that is diffusing the town.
The early proposal by Tripp (1942) to separate fast long distance traffic from slower traffic does not offend the natural progression of activity from fast-to-slow-to-street-to-shop. What we have unearthed is the tendency to take the street out of this progression leaving fast-to-slow-to-shop, the street stage having been jettisoned to allow the shop to converse with the motorist in the car park. The case study example (10.04.03) (113125) where the McDonalds drive-through seeks to locate in the block core has an interesting reference to this eventual state.

14. 02. 00 Town, Block, Plot and Small Decisions

Whitehand (2009) (2.13.00) referred to the importance of examining the way in which morphological subdivision is governed by an underlying process of decision making. Our findings serve to illustrate the result of an absence of understanding between decision and consequence.

In many fields, new ways of doing things, successful at individual level, may develop and be imitated across individual operations before their broader consequences are fully realised. Under such circumstances underlying processes may reach states of inflexibility quite silently because they are not related as much to strategy as they are to habitual individual action. The individual plot intervention, as a generator of urban form, often assumes coordinated intentions by adjacent plots, sometimes but often not led by a larger scale plan. While some interventions may assume a repetition of their form by others in the advancement of the greater town, many fail to anticipate the collective consequences which their ideas induce.

A block metamorphosis has perhaps taken place gradually in smaller settlements without significant understanding of its progression. Emerging urban layout forms have been identified in this research which reject, or forget, plot-to-street structures. These include inverted forms of the block-to-street relationship with an emerging circulation hierarchy under which the user might no longer enter the town by the street (13.04.00). A visitor to the town now seeks the block core as the place where a car park is likely to be found. In response the block-core car park is a new must-have for every town, if not for every block, mustering every support for the concept, without considered anticipation of its relationship with the street. A blind support for core priority, which may be short term, borrows from the realm of perimeter plots, while the ability of the core to serve or support the surrounding streets by structured means is perhaps gradually extinguished (13.05.00).

Until recently, planning authorities had shown little reaction to this progression. Although some have responded in cases where the advanced effect of core saturation is beginning to
reveal a negative result, there is elsewhere an absence of policy almost to the point of blinkered support (11.04.00) for some of the leading stages of the process.

14. 02. 01 Emerging Form

Our evidence has shown that if planning policy does not protect the street and the plot frameworks which serve the street, a sequential process can take place which effectively dismantles that street, by threatening the viability of its primary functions. Evidence shows that this has progressed significantly in some towns. The block core might originally have been seen as the greatest service asset which the street had, but mismanagement of its relationship to the street could now have turned this asset into a clear threat. From a stable block perimeter where the back had supported the frontage, to serve the activity of the street, the frontage has now been turned to face the back, as a new front, within a trapped square of limited activity. The form of the block has been turned inside out. Where Marshall (2005) had referred to the town being turned inside out by the proposals of Buchanan the street was the loser. In that case the street was losing its activity outwards (2.05.00). Here the principles are not dissimilar, the street losing its activity inwards to the block core. All of the disadvantages which Kropf (2006) has identified (2.09.00) as present in the perimeter block by design are being assembled by default. But here the concept acquires, instead of an intended semi-private central space, a further accidental public space.

14. 02. 02 Critical thresholds and limiting states

The emerging form, as outlined, enters limiting states, limited by scale or capacity, beyond which it cannot progress without re-arrangement or revised objective. One might refer to such limiting states, such as core saturation, as thresholds (1.03.00). Indications have been found of such approaching thresholds (8.07.01), beyond which the path of development is blocked. In towns where these thresholds have been detected, the most common strategy has attempted to reverse and redirect the process (8.08.01). This may be taken as clear evidence that the unplanned consequences are already perceived as negative, acknowledging that the town had taken a less favoured direction. From the evidence in hand one can identify the towns in which thresholds are about to be reached at various stages of imminence. By comparing towns which have reached inversion or saturation with those which have not, one has been able to observe the signals of approaching limitations, and recognise the limited range of options (8.07.00). A block core car park surrounded by a circle of newly established frontage rights represents a line that is
difficult to redirect (11.04.00). Public access to a block core creates an irreversible permanent structure, particularly in jurisdictions where continued access secures in law a public right of way, as is the case in Ireland. The inflexibilities set up by this circumstance, will limit the state of developing frameworks that may as a result have little capability to respond or adapt to future market variation. Change in the landholding structure of severed plot tails is not easily reversible. The line of severance, established in deed, is seldom open to re-visitation.

The original plot with concentrated frontage on one end and supporting flexibility on the other, now finding an obligation to present at both ends, has crossed a threshold of reduced flexibility. When surrounding exposure begins to demand frontal response from opposite ends, limitations are set on internal organisation. In the original plot the combination of committed front but open back had been a hedge against such limitations.

An important finding from Conzen (1988), in the context of emerging evidence here, is that it is the needs of the individual plots that collectively define the form of the block. If the collective form of the block restricts the domain of participating plots, limits their performance, or compromises their freedom to self-organise, then the traditional balance by which burgage plots had the flexibility to diversify, within a resilient urban system, is lost.

14. 03. 00 Planning, Development and Foresight

Evidence from this research has revealed that almost all of the stages identified (in chapter 8) would have been regarded by stakeholders (10.01.06) as locally positive, whereas the cumulative effect of these has been, in the absence of strategy, negative. One could argue that a long-term plan might protect one from locally blind decisions but evidence suggests that a plan informed by local place and time might, in the absence of exceptional foresight, actually have had little capability to prevent long-term negative consequence.

The interview findings of this work have revealed much local praise for the achievement of some stages, often without awareness of negative consequences becoming elsewhere conspicuous in towns which had already advanced to later stages. Just three local authorities have observed, and attempted to halt, block inversion (8.08.01). Some local authorities attempt to prevent site fragmentation while others attempt to prevent site assembly, suggesting that at best there are different components among towns which require different forms of incentive in their contribution to the structure of the settlement.

From the towns which have reached a limiting threshold, the duty of a planning system to transfer knowledge of consequences backwards to those at an earlier stage of development
thus becomes apparent. This perhaps suggests guidelines at national level, with greater dissemination of planning experience among authorities.

14. 03. 02 The Development Plan and Principles

Ideally, the established development plan for any town might at its statutory six-yearly review (as applies to Ireland) assess the broader direction of the total town, but development plans examined in the course of this research appear seldom to address what one might refer to as the operational structure of a town centre. Plans, in compliance with mandatory regulation, commonly concentrate on perimeter expansion, on the organisation of circulation and on the renewal of derelict areas. In an examination of six town development plans (corresponding to case study areas)(10.01.01) no evidence was found of any intention to address the operational structure or frame of the town centre in the way in which the uses of form and space might relate to each other structurally. This of course accords totally with the findings of Conzen at Alnwick (2.02.00) where, as Conzen suggested, the preoccupation with perimeter development missed the changes inside the street blocks of already established plan components (Conzen 1960 p4).

Legislation requiring Appropriate Assessment (2009) introduced the concept of strategic long-term vision into development planning. Within this, Core Strategy (core here being an abstract term meaning fundamental strategy) is an attempt to force the consideration of long-term settlement form beyond immediate plans. Development plans are now obliged to include and adopt a core strategy. While the core strategy encourages a settlement to look outward to its role within a broader structure over time, it does not however address the corresponding inner structure under which the settlement form might sustain its operation in support of that role.

If it were really appropriate to take lessons from the burgage structure of Loughrea, physical masterplans might be replaced by a set of carefully considered rules facilitating individual freedom within a strong vocabulary of urban structure. Our evidence shows that in earlier systems an open-ended structure, never planned in rigid detail, was sufficiently free to carry change and expansion across thresholds. Perhaps the current setting of spatial targets, objectives, completions and other such political deliverables seldom addresses the progression of a settlement beyond such thresholds, failing to recognise development as process as much as product. Stages recognised as benchmarks of physical achievement can often close the freedom of subsequent open-
ended options. If the far end of any current process represents the most challenging threshold for planners to address, then in that address the incorporation of flexible future frameworks is perhaps the most important component.

14. 03. 03  Historic applications

In chap five this work exposes historical attempts to create rear structure at various times, even to add it to the form of a preceding period (5.03.02). What this shows is a recurring attempt throughout history to add constructive layout to the support function of the block from behind. Beresford (1967) recorded a number of principles of this support observable in his drawings of Norman towns such as the differing road hierarchies, the presence of lanes and the patterns of plots within blocks, without drawing attention to these. Conzen's (1988) later work confirmed the relevance of these in his comparison of French towns with Ludlow. Our observations of Irish towns add an increased relevance to these observations through the establishment of further connections between structured planning of rear access frameworks in Ireland and contemporaneous models in France (5.04.02). Beresfords observations pre-date but perhaps anticipate the beginning of the modern cycle of change which has been recorded in this work.

14. 04. 00  Research Contribution

This work has identified a process the existence of which had been suspected at the outset but not searched or documented. It has dissected that process, and established an understanding of the forces which trigger recognisable stages in the process. The work has confirmed a changing relationship between street and block core in the typical small town where the traditional structure is slowly becoming inverted due to a number of forces acting independently in the absence of planned management. The research has located the extent of this in the Irish town. At the scale of the town, the role of block core as a support for block edge had not been previously explored. The block as a unit of study had perhaps been generally associated with larger cities, having a scale of organisation not always recognisable in the spatial vocabulary of the smaller town. This work introduces new ways of seeing the un-closed block of the town.

In search of the forces of change in the block, the work has opened a deeper understanding of the post-war interaction of such factors as increased car use, residential diffusion and the
changing scale of the retail interface. The circumstances of the Irish town, having a relatively lenient development control policy, allowed these forces to be studied in a comparatively unbridled market evolution, producing evidence and analysis that can now be applied to towns anywhere. In particular it has been possible to identify distinct phases of change in the retail interface. This interface, having given birth to the form of the market town, now leads its metamorphosis.

From the results of analysis, this work has suggested a shift of focus from the immediate to the strategic, identifying block options in the projection of particular components towards longer-term settlement structures, as the emerging metamorphosis approaches critical thresholds.

In addition to the path of enquiry led by its main hypothesis the research uncovered a number of associated observations in the progression of plot and block. Where the shopping domain colonises the traditional burgage structure, a clash of planning policies is discernible. In some towns the opening of the block core leads to processes such as a fashion for cross-block pedestrian routes of small shops, while other towns have identified the opposite need for the assembly of larger core plots in order to provide an advanced floorplate provision for anchor stores.

From the evidence extracted, it has been discovered that towns of differing historical origins have differing adjustment capabilities to new development. This had not previously been acknowledged. It has also been observed that towns of different rank have different frameworks of priority by which their central components relate to each other.

Empirical findings have been linked to established discussion on the theoretical distinction between front and back, something always assumed in the town as a contact interface but now becoming obscure as the readable function of its parts loses clarity, now challenging an accepted understanding that has existed since the invention of the city. Findings have also contributed to established discussion on stability and flexibility in typical urban place.

In order to reach a point of origin for the current phase of metamorphosis it was necessary to examine the evolution of structured block layout in Ireland. This had not been previously documented. Here research has traced and collected evidence of access frameworks and planned layout structures within blocks as a significant addition to discussion on the spatial history of the Irish town behind its facade. This comparative evidence has been drawn from cartographic sources not previously searched, introducing a new field of morphological study on the service side of plots, to add to established work by others on streets.

It might be argued that the work could have commenced with the study of just the twentieth century progression but in hindsight this would have missed the out-plot scale associations
which arguably provide the most important facility for the layout of retail anchors in the operational structure of the town.

Over the eight year period in which this research was carried out some relevant work by others progressed similar fields. Tarbatt's work on the plot (2012) with particular attention to the Netherlands and Ireland was significant. Although it examined largely the residential plot and not the block, it made important dimensional suggestions regarding the modern use of the traditional plot. Murphy's work (2012) on Irish towns was similar, applying, in Westport, the concept of the housetown block for modern residential infill. This research did not however address the morphological structure of the block or its continuity. The work of Torma, Griffiths et al (2017) examining cyclical pattern of high street plots in the embedded towns of suburban London was also of interest, as was that of Vialard (2012) looking at overall block form and shape.

The above works were of associated interest, running parallel to the path of this work, as referred to in text, and contributing to a similar field of enquiry though not specifically to structural relationships between block and street.

14.04.01 Opportunities for further research

Not every village grows into a city but one can see from our sample that as towns grow into and beyond different ranks, the components of their centres relate in different ways to each other as do the towns themselves. This work has touched a small phase in a progression that suggests a tantalising field for further study.

Findings here have led to a realisation that there are different types of town and when one synthesizes with this the emerging rank of each town in a modern settlement structure a research need emerges to understand how towns of different origin and very different structure can play their part in the idea of interactive settlement clusters, not just in Ireland but in the much-desired environment of small towns across Europe and beyond. The research described here in chapters four, five and nine would provide the ground work for such study.

The relationship between the user and the town begs socio-spatial questions on typical user-visits to towns of different rank, examining in the needs of the visit, the emerging response of the town, and the ideal operational structure around the visit. This would include of course visits to parts of a town by residents of other parts.
The ideal physical form of settlement, which responds to the ideal operational structure, is then of course the obvious subject of further interrogation. How this form is matched to, or compromised by, the inherited settlement is an emerging research question.

It has been suggested that there is no normative theory towards concluding what good urban form is, since there is no conclusive relationship between good urban form and happiness (Lynch 1981 p100). While such theory might quote evidence from qualitative research, it might on the other hand be argued that certain quantitative measurement has the capability to identify elements of a desirable dimension which lead to good urban form. Efficiency, or the degree to which a system works without excessive waste of resource by users, can for example be measured. A layout system can be measured for its operational efficiency. A grid of inverted blocks for example could be measured for comparison with a street-focussed grid under a number of cross-cultural quantitative values. Such comparison could establish, in further research, a more focussed understanding of ongoing change in urban form.

The field research for this work has been carried out in a period of abnormal recession thus finding the case studies in what might be defined as an abnormal state. While one must assume that the patterns observable are extant anyway, above the overall effect of recession on a town, the confirmation of such patterns in post-recession context would add value to the findings.

One might ask for example if the closure and opening of shops between the street and the core is a zero-sum gain. This would be difficult to ring-fence in its entirety. It would be easy in Roscommon where the main street and the core carpark are the only two identifiable centres of retail activity in a town of clearly visible migrations. In Sligo on the other hand it would be impossible as there is currently a significant migration elsewhere due to a mixture of accessibility and fashion from a dying south eastern quarter to an advancing north western segment of the town centre, neither of which are associated with the block-core in question.

What could be of benefit however, concentrating on the core car park alone, would be an investigation of the origin and destination of retail activities which have entered or left this core. In this respect more extensive historical research would be necessary to map the origins of past entrants.

The year 1911 has been used in this work as a grounded date for research as it forms a baseline year in the availability of cartographic and statistical data for Britain and Ireland. It thus facilitates linkage to further research by others.
14.05.00 Reflection

The town is a complex mechanism, difficult to steer and perhaps impossible to reverse. In its original form it was a market place; a retail interface, which has over time chased its market with revised shape, but has now perhaps run short of options in urban form. On-line retail may now change the function of the town, or even the reason for the town.

Smaller towns may become residence-only settlements with the retail components of a neighbourhood centre. The larger towns may compete for the role of comparison goods clusters which avail of the greater mobility of the user (1290). The greatest likelihood is however that the retail interface will be virtual, online, and the physical street of shop windows will have no further reason. Although it may have no reason in the retail sense however the town may still be embraced as the established nucleus of its now-diffused community.

The planner has, in favour of nucleated settlement, argued for decades that scattered residence would be unsustainable with the approaching depletion and climatic effects of fossil fuels. The electric car may now have diminished that argument, but in other ways saved the town. There may now be a role for the smaller settlement and its defined hinterland.
It has already been concluded that in the city the pedestrian and car can never be mixed comfortably in shared urban space (02.05.00). The smaller town however may facilitate a more workable alignment of space, with car and pedestrian in closer proximity. Maybe one accepts that the smaller town as the nucleus of a dispersed hinterland does have an identifiable place in a scattered mobile society. With this acceptance however comes perhaps an acceptance that the town may need to adjust in response to the car. Some adjustments may of course be positive. When the car does, as it may soon do, plug into any streetlamp for power, the convenience shop may perhaps return from the redundant petrol forecourt to the high street.

Perhaps, however in its interaction with the car, the smaller settlement, having shorter transects of contact through plot and block, does have a greater range of adjustment options than does the larger city, without loss of form. Municipal authorities are beginning to recognise the car park as a strong anchor force, to be located more strategically as a pole in the ideal operation of the town (fig.1402).

The shifting relationship between the car and the form of the town is still perhaps far from being determined. Block inversion, exposed in the above research, may be just a stage in an even more complex metamorphosis.
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Appendices

APPENDIX 1

SUMMARY OF PRINCIPAL STAGES IN THE PROCESS

We take, as an enabling assumption, the year 1800 as baseline;

1 Original state; single plot, building to front with retail on ground floor and residence above. An archway at one end of the façade allows vehicular entrance to a service yard and outbuildings at the back, beyond which the plot is occupied by gardens for the residence above. The rear boundary abuts other private plots or the countryside.

Pre-twentieth century developments;

2 Site assembly of two or sometimes three plots in order to accommodate a larger scale use such as a bank, hotel or larger retail unit, (1861) (Sligo, Longford, Dundalk, Roscrea, Monaghan, Wexford) All original elements of the plot retain the same relationships to each other, at a larger scale.

3 Shared back access laneway serving some or all plots. (Access to plot through door or gate)

4 Shopping Passage through block from street to street on one, sometimes two, plot widths (1862) (Cork, Waterford)

Twentieth century developments;

5 Upper floors become vacant (1963) (Dundalk, Wexford, Galway, Longford, Clonmel, Tralee)

6 Surface car park on back of single plot for customer use, with access through archway or external side passage (1967) (Sligo, Dundalk, Roscrea, Longford, Waterford, Mallow)

7 Alternative entry to rear of retail unit from car park

8 Individual surface car parks amalgamate; generally two, sometimes three

9 Local authority intervention to introduce public block core surface car park (1976) (Sligo, Longford, Clonmel, Castlebar, Dungarvan, Dundalk, Roscrea, Birr.)

10 Dedicated public vehicular access to car park from street. (Sometimes with a new link road) Castleblayney, Roscrea, Charleville, Dundalk
11 Orientation of shop units to address existing pedestrian route between car park and street

12 Indoor shopping passage from car park to street with dedicated units

13 Shopping passage from car park to street indoors or outdoors with dedicated units and anchor unit. (Ashbourne, Dundalk, Roscommon)

14 Blind shopping passage from street (to anchor unit) without car park connection (Mallow, Sligo, Castleisland) Unrelated to main progression but inspired by 13 above.

15 New public pedestrian street linking car park to existing street. (Westport, Clonmel, Longford)

16 Opening of rear secondary frontage to car park by shop units on street (Dungarvan)

17 Footpath and lighting to edge of car park (Longford, Ballina, Sligo, Clonmel, Castlebar)

   Street form following car park into block core (Ennis, Sligo, Naas)

18 Opening of primary frontage to car park with secondary frontage to street (Castlerea, New Ross, Castlebar)

19 Opening of frontage to car park only with no frontage to street, by plots which have no option (Newbridge, Navan, Sligo, Ballina, Dungarvan, Naas, Ashbourne)

20 Opening of frontage to car park only with no frontage to street from plots which have option to both.

21 Linkage between block cores across the street framework

22 Expansion of floorspace on block core frontage trapping and land-locking plots on the streetward side.

23 Apartments or residence surrounding and addressing core car park.

24 Clustering of larger scale units on outer non-street sides of car park

   Generated by car park rather than street

   Library, Govt. offices, McDonalds, Retail Warehouses, Aldi/Lidl, Multiplex Cinema

   Apartment blocks with marginal uses on ground floor

   Edge uses, Suburban-scale units, feeding from car-park
25 Closure of frontages to car park or to any spaces other than to the street (Tullamore, Clane, Killarney)

26 Change of shopping passage and shops back to single retail unit

27 Recovery of block from car park to intensified street system or alternative layouts

28 Multi-level or underground car park in block core (Ennis, Naas, Newbridge)

29 Vertical subdivision block models layered to provide composite relationship

   Such as deck access
   Stacking of residential space and commercial space into ideal vertical relationships

30 Raising or lowering of site access structure in the block core

   Basement service area or multi storey car park
   Site access archway moving to base of circle
   Original plot plan becomes plot section (Athlone)
## APPENDIX 2  TABLE 3009  SELECTED TOWNS

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Examination of some towns in their current state, at first sight, reveals some observations, which are here summarised. This list includes all sixty-six base sample towns in addition to twelve initially included as pilots before the sample was fixed. The cities of Dublin, Cork, Limerick and Galway are excluded for now as an initial examination of maps of these cities shows that a pattern of single plot block coverage has taken over from the plot to street relationships under study (1).

The list is presented in gazetteer form. Towns are first listed in alphabetical order. For each, a short description then follows.

In this, attention may be drawn the location of commercial elements common to a number of towns, which are seen to have an influence on responsive change in block structure. The principal convenience retail stores may be noted. Here Tesco tends to be the principal convenience store in larger towns. The location of Dunnes Stores, a convenience/comparison competitor to Tesco, may also be noted. The location of Supervalu, Centra, Lidl and Aldi; smaller comparison equivalents which almost all towns have, will also be significant and are noted. The summary also draws attention to the location of car parks, as these are assumed to be the major generators of the progression under study.

In Ireland the High Street is referred to as the Main Street. We retain this reference.

**Ashbourne**

Ashbourne is a village where extremely different morphological structures are juxtaposed, due to the village having expanded rapidly in the decade prior to 2008. The Supervalu supermarket which placed itself on the north east end of the main street, in the obviously earlier stages of the village’s expansion, had a back-of-pavement frontage leading to a small internal shopping-mall of convenience uses. These were anchored by the supermarket and a pub to the front and surrounded by a surface car park at the back and out-of-town side. The modest internal mall led through the centre to this car park. The building height was of two storeys.

Along the north eastern side of the main street the plots are deep as might be expected in a roadside village. Their common tail-seam, has a back-to-back relationship with new housing estates beyond. In these deep plots typical stages of transformation have begun. Individual customer car parks have developed, though as yet unconnected from site to site. One belongs to the village hotel while another serves the pub. In one plot, behind and perpendicular to the retail frontages of the street, a small line of shop units has been created fronting on to the side of the car park from what appears to be an adjacent commercial site. In structure, this arrangement is not unlike a commercial version of the blindback. These shops are occupied by marginal uses.

On the north-western end of the main street Dunnes Stores is located. Although its frontage abuts the street the store largely opens in the opposite direction to a surface car park with additional underground parking under both exterior and interior. To the south of this is a new
urban quarter made of narrow streets and urban squares lined with buildings ranging from four to six storeys. The buildings house apartments on their upper floors with intense shopping below which includes (as advertised) forty international retail stores, a range of restaurants (many of them closed) served by basement car parks and basement service zones, a multi-storey car park (empty) and a surface car park (full). The surface car park which links with the main street may be described as a large-scale pull-in space off the street or an extension of the frontal street system rather that a rear access car park. Fronting onto it, Tesco and McDonalds are located. The west side of the main street of the original village is substantially in its original state, having little commercial activity and little contact between it and the spectacularly different urban area to the rear. A 2m high blockwork wall separates the new urban quarter from the tail seam of the main street, and a similar wall in turn separates it from an estate of semi-detached houses on its outer side. Both Aldi and Lidl are situated on the edge of the village, accessed from the road via a frontal surface car park. South of the village core, on a continuation of the main street, are two schemes of four storey perimeter blocks with small retail units at ground floor and apartments above. Both have surface car parks in their cores and one also contains a Hotel. Ashbourne perhaps satisfies the individual locational strategy for each of its convenience chain stores, something which is compromised in most towns in which they have located together.

Athy

In Athy the principal street runs in an east west direction crossing the river Barrow at the town centre. It forms Duke Street to the west and Leinster Street to the east. Between Leinster Street and Mount Hawkins the block has an interesting plot progression where the historical advance and retreat of housing plots on the Mount Hawkins side has dove-tailed with the increased demand for floor space by expanding retail use on the Leinster Street side. (Detailed in a paper delivered to AESOP 2013). West of the river the town is anchored by no less than two Supervalu stores. One, north of Rice Square, with a large surrounding car park, has little connection to the plot structure of the town. The other, on the south side of Duke Street, has a large car park to the rear, accessed from the side via Convent Lane, which doubles as the car park to the adjacent church in alternating use. This block, with Green Alley as its service route, has to the west some new infill housing which uses the original plot structure of the block. The block maintains its retail frontage to Duke Street. A standalone Lidl sits in its own car park at the east end of Leinster Street.

Athlone

In Athlone the Golden Island shopping centre south of the main street is a large 40-shop version of an older centre on the perimeter of the main street, linked to the same land parcel. The new centre is an increased-scale version of the old, in the same orientation. A new central shopping mall, The Athlone Town Centre, north of the main street attempts to strengthen the core and does so quite successfully due to its proximity to the original centre. No block metamorphosis of significance is observable in Athlone, but on the south side of the main street the plots have been double-loaded, creating a façade by which the town faces the Golden Island centre with offices and a McDonalds restaurant, obviously availing of the shopping centre’s car parking facility.
**Bagnalstown**

In Bagnalstown the Supervalu supermarket occupies the backlands of one block west of Pump Street while a site at the back of an adjacent block on the other side of the street serves as its car park. Both are accessible from the street and there are no frontages on to the car park from the remainder of its block. It is clearly owned and developed by the supermarket. This is similar to an arrangement between the Supervalu shop and its car park in Dungarvan, on Western terrace.

**Ballaghaderreen**

Ballaghaderreen still retains the layout of its unusual plot and back lane structure, () which might be seen as an obstacle to site assembly. In the block south of Pound Street, with its obviously complex landholding structure, no plots have altered or expanded in almost a century. North of the main street the Supervalu anchor, originally fronting on to the street with car-park behind accessed by a side lane, has recently receded to a larger new store with attendant car park, behind the original store but outside the plot structure of the street.

**Ballina**

In Ballina the block between the river and O'Rahilly Street has reached the climax of the burgage cycle, almost all plots having total site coverage. In the adjacent block south of Tone Street, a core car-park has developed. To this many of the backs of properties on Tone Street have reacted. Rear frontages line the car park edge in three groups and have been provided with a frontage footpath. One plot occupied by an Eason bookstore uses the change in level between street and back to interlink its floors over half levels. On the western end of the block, the Garden Square pedestrian link cranks an outdoor passage to reach the core from an almost corner position on its streetward side. A vehicular passage from Teeling Street, lined on both sides as a street of shops forms one of two vehicular access routes to the core car park. The other is a new open route from Bury Street, one of its sides made of a three storey building with shops below and apartments above.

West of Pearse Street, the old fair green had been located outside the tail seam of the Pearse street plots, accessed from Tone Street to the south. The green has now become a car park. Market road runs along the western edge of this space, linking northwards to Humbert Street. New buildings on the west side of this road form a strong frontage to the fair green space. On the east side however, few plots in the Pearse Street block have availed of contact with the car park edge. An exception is the Pennys store which has developed dual entrance between front and back. A new Tesco standalone store addresses Market road and a series of separate car parks serve various uses in a number of directions, including a car park for bank customers, accessed from Pearse Street. Plots on the west side of Pearse Street are untypically deep.

The block between Pearse Street and the river has three modest car parks, although one might have expected more, given its strategic location served by Emmet Street. This block is composed of deep plots (dimension) and could be a very efficient block, given its central location and the potential floorspace which is achievable on its plots. Two of its car parks off Moy lane appear to be customer car parks for the bank of Ireland. The third, near its south end has pedestrian access to Tolan street with a new purpose built frontage building on its riverside. The latter however has no active ground floor uses at present. An arch in its centre
leads to the car park behind. This in turn leads to a subsection or separate area for bank customer parking. Beyond the north end of Pearse Street, is a standalone shopping centre, with Dunnes stores as anchor, through which an arcade links to an extensive area of surface car parking beyond. The civic offices are also located here. This shopping centre flanks the outer side of Humbert Street while the opposite side still retains neat semi-detached houses with front gardens.

Ballinasloe

In Ballinasloe, the original back lane behind plots on the south side of Main street east is now linked across the river to a car park on the other side. In this block the dense lane structure, has not induced any significant car parking development. On the north side of this street a rear access road has been developed to open up the backlands. (See Ryan) Two private customer car parks take up the east end while a hotel has developed a high capacity surface car park centrally, linked to the main street by a laneway which has attracted some minor frontal uses at its streetward end. There is no significant rear access developed on any of the streets which back on to the Fairgreen and all of the plots on the south side of Dunlo Street have maintained their original service yards to the rear.

Ballybofey

At Ballybofey the Back Road north of the main street makes an interesting structure in its block, serving the backs of shops on its main street side, while serving two large hotels, on its outer side. Some layout structure is suggested by McElhinneys store with its attendant shopping centre around an adjacent car park forming an edge corner to the town that is much more successful than any other part of the town. A new Supervalu-anchored shopping centre in the suburbs to the south east fills the ground floor of an imposing building full of empty apartments. In Stranorlar to the north there is a completely failed shopping centre and apartments around a car park mid-way along the main street on its eastern side, similar in layout and structure to that which is alive at McElhinneys. This appears to be a clear case of excessive competition for a limited market. The structure of Stranorlar is not as interesting as might be suggested on a map.

Ballygar

In Ballygar the back access roads are public. The structure and layout is similar to that at Charlestown. In Ballygar however there is no evidence on the map of a second measured plot depth outside the access lane, in the manner discovered in Charlestown.
Ballyhaunis

In Ballyhaunis the access laneways to the rear of both sides of the main street still retain their service use, for the limited plots that use them. The town is in state of slow activity. No plots have developed any on-site reaction to the laneways beyond normal original use. On the west lane some small houses have colonised the space as a street. On the east it forms the boundary between the commercial street and some social housing beyond. A small riverfront development, with low-turnover shops on ground floor and apartments and offices above, is fronted by a car park in the core of the half-block between Bridge Street and Clare Street. The Supervalu shop is located in a standalone building in the block between Clare Street and Main Street. It is served by a generous car park which is itself served by a new road skirting the block on its outer side to serve the outer ends of Main Street and Clare Street. This car park is conveniently close to the Church car park to enable alternate time-sharing use.

Ballyshannon

The main blocks of Ballyshannon have no significant hinter-development although a number of car parks have developed in fragments. These, like those on the north of Clonmel’s central block, have not yet tempted any relationships with the immediate surrounding land uses.

Bandon

In Bandon the blocks to the north and south of the main street have not opened their cores but still serve the main street. On the west of the north side the new Riverview centre has a Heatons and Supervalu anchor, and a large surface car park. Lidl is also present close by, availing of the opposite end of the car park. Farther south an older shopping centre, with limited parking, is landlocked within the urban fabric but has the post office as its anchor tenant.

Two Swords-type () courtyard developments face south to Market quay but their ground floor retail units are unoccupied. The main street is strong, particularly on its west end, and perhaps as a consequence no back site development addresses McSweeney quay to the north. The river periodically floods into this block, and although a plan is in place to correct this threat, its current state has inhibited commercial development.

Birr

In Birr the main street is still core to the town’s retail activity, although a new standalone Tesco has been established on the edge of town to the south. On the west side of the main street no significant car park grouping has developed behind the street frontages. On the east side, the large Supervalu has located itself centrally with a car park behind accessed from Mill Street. A laneway on the opposite side of Mill Street gives access to a large surface car park, newly developed.
Bray

Bray has extensive surface car parks serving its main street from behind both the west and east sides. The western car park, accessed from Herbert road, has non-commercial uses on all if its sides except that of the main street. Therefore there are no frontage openings. Here the car park is linked to the main street by the Village Gate arcade; a tight passage lined with such uses as a greengrocer and fish shop. It is the only route between an active large car park (200 spaces) and the main street. Its terminal building to the car park has a shop frontage to the park which is empty. (Planning restriction?) A similar car park of lesser capacity on the east side of the main street has vehicular access from two side streets and has a similar current capacity. It has a pedestrian route to the main street without any retail frontage to the route at present. Planning permission has been granted for development of a plot which will have dual frontage to both the main street and this car park. At the edge of central Bray, Westbourne Terrace has a Tesco metro and a Dunnes Stores both of which appear to have no significant rear service access. It is assumed that frontal pull-in areas allow frontal service to both of them.

Buncrana

In Buncrana, blocks of attractive commercial plots lie adjacent to the main street to its west, or seaward, side but the town has not extended significantly on to these. Plots on the street are backed in an almost perfect layout structure by the parallel St Marys Road. Church Street crosses the block centrally with no significant frontages and its northern and southern segments are then crossed almost centrally by two pedestrian routes thorough smartly laid-out car parks. The northern one of these is fronted by a Eurocentre store, with two storeys of occupied apartments above. Along the southern edge is a land strip which could serve further frontage uses and may be in storage for this purpose. Apart from two small shop doors there is no further frontage to car parks in this block, north or south. The main street of Buncrana, like Dundalk at a smaller scale, has only small local shops, with few peaks of activity along its length, a reason perhaps for few businesses to have sufficient confidence to move very far from its frontage line. At its southern end, Ardarvan square has opened to the east, with three rows of commercial/apartment buildings addressing a street and car park, animated by an Aldi / Lidl focus. It has medium activity with some international names such as Subway. On the north or other end of the town centre, a newly built Supervalu, with a car park limited by site size, forms a busy counter-anchor, though slightly too far north of the activity of the main street. Ardarvan square opens an interesting access provision by its back lane structure to the rear of commercial ground floors on the east side of the main street. Buncrana whose activity is seasonal may not have a market for further floorspace.

Caher

In Caher the provision of the large tourist car park close to the centre perhaps accounts for the fact that many backlands to the main square area have not developed parking use. The absence of any major activity generators among its central shops may be another reason. One car park does exist on the north end of the eastern block to its square, serving a group medical practice in a backland building, with vehicular access from an eastern street, and pedestrian access to the square. There are many derelict backlands in the blocks close to the square.
Cahirsiveen

In Cahirsiveen a rear service laneway runs parallel to the north side of New Market Street. It takes the role of an in-block distributor serving on its north side such uses as newly built houses and a car repair workshop. The latter must be regarded as a common use in such location. Farther west, the town centre is served by a car park north of the main street between O’Connell Street and Old Market street. This is formed through the amalgamation of a number of plots, laid out by the local authority, inducing some typical block crust developments on its main street side such as a through shop with two entrances, and a shop with car park frontage only. The car park has a small pedestrian lane to the main street. It serves a number of uses on its outer side such as a car maintenance depot and a recycle bank. In new market street a petrol station is backed by a large centra supermarket which has a conspicuous car wash on its rear façade facing a substantial car park.

Callen

Callen has a large block-core car park feeding directly off the street and serving no plots from behind.

Carlow

In Carlow the block south of Tullow Street is backed by an early inner distributer route. On to this it presents a variety of spaces and urban concepts. Some of these relate to the back of Tullow Street while others are fringe uses relating to the distributer route. From the core of this block the transect northwards to Tullow street is European, the transect southwards to the distributer route is perhaps American. This is not unlike the north western block in Monaghan, although the Monaghan example is tidier in the transition between buildings and surface car park.

The new backland distributer route in Carlow, as in Monaghan, Roscrea, Roscommon and Castleblayney, gives access to the rear of the dense street while opening up land for car parking, and other uses, on its inner and outer side.

Carrick-on-Suir

In Carrick on Suir the car park behind the plots of the north side of the main street is surrounded by only the unopened walls of surrounding properties possibly because it may be in single private ownership. In such case the surrounding boundaries may therefore be of party wall condition, inhibiting openings which create boundary commitments, similar perhaps to Dundalk. Apart from one other car park, which appears to be local-authority developed on the south side, there are no further significant car parks in the plot-series of the main street in Carrick on Suir.

The lanes which lead from the main street in Carrick-on-Suir, on its south side, do so with a narrow step down like those on the east side of Wexford’s main street. Many of these are
lined with residences. Bridge Street slopes downwards as far as Strand lane and then rises again slightly towards its bridge, indicating the last piece as the made-up ground beyond the rivers natural edge. The Supervalu with its surface car park is located west of west gate on the south side of the street.

Cashel

Cashel has maintained the first principle where the car park, south side of main street is entered from an adjacent street with only pedestrian access through a laneway to the main street. Two other car parks are entered from the main street but do not react with their surroundings to any great extent.

Castlebar

In Castlebar, the supermarket which is located on the south side of Shambles square, still shows a non active façade to the square; its original address. It has blank shopfronts with opaque windows and no access or visual contact between the shop interior and the square. The supermarket, now Dunnes, has entrances to the side but also to the car park at the rear. The car park however is now part of an extensive car-friendly quarter of suburban retail uses served mostly by frontage car-parks. These include a standalone Tesco, a drive-in McDonalds, Homebase, Aldi and Centra fronted by a petrol station. Along Hopkins road, a street edge of three and four storey fabric has developed, forming the new frontage to a closed urban block that backs on to Church Street and Ellison Street. The new frontage has ground floor retail with apartments above. In the core of this block is a multi-storey car park.

An original core-consolidation plan of 1988, now belonging to a different time and scale, had attempted to create two anchors, at each end of the original town core, one of Dunnes Stores at Shambles square and the other combining Supervalu and Pennys north of Linenhall street. The second anchor is still there. Its stores do not connect with Thomas Street but address a car park of limited capacity to their west which forms the core of the block. This is linked by access roads to Thomas Street and New Antrim Street. It has pedestrian linkage south through the block crust to Linenhall street, and across this street through another pedestrian way to the car park combination behind and to the west of Bridge street and its continuation, Market street. These streets form the spine of the original town, and have surface car parks developed at the back of both sides of the street, both of half-block structure, due to natural barriers and fixation lines. These car parks serve the street very differently, mainly because the long sites on the eastern side have maintained their rigid tail seam line, outside of which the car park commences, on land not assembled from the burgage plots. As in Longford the plot depth is untypically long.

Castleblayney

In Castleblayney the new access road north of the main street serves car parks to the rear of the town centre’s main uses; the Supervalu at its centre and the hotel at its west end. A service station/garage to the east is also enhanced by rear access and may have been a benefactor to the roadworks. Here a purpose-built urban square is attempted, separate from the land use of the surrounding streets, not unlike that attempted north-east of the diamond
in Monaghan. In the land use of the main street, the south-east end is conspicuously occupied by a cluster of professional offices and consultancies.

South of the main street, a car park has been developed with vehicular access from a back street and pedestrian entry to the main street from its south through a narrow archway, not unlike that at Cashel. No commercial uses have attempted to address this route.

**Castlerea**

In Castlerea, both Allied Irish Bank and Bank of Ireland, located on the north sides of Barrack street and main street respectively have generous customer car parks behind as do the council offices located in the old courthouse. On the west end of the Main street, on its north side, a road has been inserted serving the backs of some plots, as in Castleblayney, and serving most significantly the cattle mart, as in Roscommon. The Supervalu is located with frontage to the main street and back to a car park served by this road. This Supervalu has its main entrance and checkouts at this car park end and has closed two of its original entrances to the main street. The remaining one operates as a newsagent shop. Many commercial premises in Castlerea appear to use their original backyards for service access through archways from the street. The availability of parking seems to indicate that the town is at a stage where on-street parking almost still serves its parking needs, supplemented by the beginnings of customer parking. Lidl is located just west of the town’s commercial edge.

**Castleisland**

Castleisland has good examples of two separate occurrences. Hogans place is a typical burgage plot or perhaps two, developed recently as a terrace of houses, perpendicular to the street, behind the street frontage building. It presents an arrangement which we would normally associate with blindbacks, though opening at the back to individual yards and at the front to a common generous Close or laneway space which includes green surfaces. A gated pedestrian route leads to this from the street while car access is from the service lane at the other end. Castleisland also has on the south side of its main street an almost blind shopping passage. At its anchor end is a coffee shop with an outdoor terrace looking on to a small car park which is accessed from Old Chapel lane.

**Cavan**

In Cavan, the main street has a conspicuous quantity of non-retail uses along its retail spine, consequently reducing the potential for a contiguous level of activity. Car parks have grouped along the backs of its eastern sites, limited in depth by the fixation line of a steep rise in ground level.

**Celbridge**

In Celbridge, the main street is still occupied by mainly traditional uses of traditional scale. Some expanded businesses have developed individual car parks to the rear accessed from
the street via archways or side lanes. On the east side of the main street a new health centre has the largest rear car park. The entrance to the centre for users is still from the street. On the west side of the street two pubs have large customer car parks to the rear, with alternative access to the premises from them, through beer gardens. Perhaps a structure is emerging here. The beer gardens may well be defined as west-facing front gardens. One of these car parks is accessed from the street using two lanes in an inward and outward one-way system. Most of the village’s service shopping is located outside the centre.

**Charlestown**

In Charlestown a second layer of site depth is evident north and south of the east street. This is also visible in some streets in Ballaghaderreen. It has survived from the earlier form of these towns, as discussed in chapter 5.

**Charleville**

In Charleville, an attractive vibrant town, there is a conspicuous absence of national chain comparison goods shops. Dunnes stores, the only obvious one, occupies an otherwise failed shopping centre on the south eastern end of the main street. The centre’s failure is unfortunate as it is almost in a perfect edge-of-centre location. It also provides a multi-storey car park with access from Bakers lane. Perhaps the parking charge is pitched too high for a town of this scale. Slightly closer to the centre on the opposite side of the main street is the Supervalu, separated from the street by a small courtyard of less supporting shops, which to some extent reduces its profile. However Supervalu does have a strategic mass of car parks to the rear. Here a link road has opened access behind the main street plots. The Supervalu car park has been enhanced by a similar and contiguous local authority facility and the combination has been surrounded by new buildings containing retail units on ground floor. These units appear to be of marginal success generating low activity. An adjacent pedestrian route to the main street, through church ground, follows a strong desire line and is heavily used without either car parking or retail frontage. Further north a number of small car parks have opened for customers and revenue, in the back of plots, accessible from Smiths lane, with not an efficient layout. Pedestrians from here reach the main street via Balls lane. Charleville has many active traditional shops and shopfronts indicating the established nature of its shopping community.

**Clane**

In the centre of Clane on the west side of the main street is a very ambitious block-core car park with an underground deck (closed) on to which an organised set of frontages were designed from buildings trading to the street. Most, if not all, of these appear to be closed. On the opposite side of the main street a number of customer car parks exist at the back of individual premises. These are at the stage where they are beginning to connect. On the south end of the village an Aldi is served by a large surface car park.
**Clonmel**

In Clonmel the closed block north of O'Connell Street and West of Gladstone street has been steadily developing a core car park for a number of years. On three sides of the block the edge conditions have induced building and layout types which react to the interfacial aspect of their location, developing dual aspect retail and shopping passage models. The local authority has paved and lit the car park, treating its edges as a square with footpaths. The street to the western edge has been recently widened at which time the local authority availed of its acquisition of the buildings along this side to redefine the relationship between the block core and the street. This it did in a manner similar to that achieved in Redmond Square, Wexford, making single-shop-depth buildings with apartments above, and blank rear walls to the car park. New entrances to the car park were also accommodated in the works.

Both Clonmel and Roscrea have their second generation standalone Tesco in place on an edge of centre location, the first generation stores in more centrally integrated locations having been recently vacated.

**Donegal**

In Donegal the block to the west side of the Diamond (main square) compares very interestingly with that on the north side of the main street in Ballybofey. Here the service lane runs between two hotels and the river, with the hotels embedded into the dense block by their street frontages. The car park behind the southern block of the Diamond is anchored by an Aldi on its outer side, but its two pedestrian routes to the square remain relatively underdeveloped in twenty years. The small sub-section of this car park to its east is addressed by a number of surrounding commercial frontages.

In one of the through retail units between the Diamond and this rear car park, a car park façade mirrors the Diamond façade in frontage, complete with footpath and cars parked edge-to-path.

**Drogheda**

In Drogheda, West Street is particularly interesting. It is the main street of the town, running east west, along a contour, as the town's main shopping spine. Its importance declines in intensity from east to west. There is a significant difference between the circumstances of plots on its north side and those on its south. On the south, plots fall downhill between the street and a minor waterfront street at their tails. On the north they rise uphill from the street to abut back to back with an established period residential area in Fair Street. Plots developing southwards therefore may avail of steep changes of level to allow service and car parking access to the block at lower levels, thus giving multi-level access to core shopping at street level, and this indeed occurs. The boundary uses on the northern, or uphill, side offer no such potential although a Tesco metro has, obviously with extensive excavation, achieved a store of considerable floorplate close to the streets centre of activity. On the south side, west end, the abbey shopping mall offers, in an old cinema; an indoor arcade from street at front to car park at rear, lined with frontages of almost deceased retail units. Farther east the town centre mall descends through a number of spaces from the main street to the lower level of Dyer Street at its tail end, having a number of anchors within and a multi basement car park accessed from Dyer Street, with exit to Stockwell Street. Stockwell Street also gives access for vehicles and pedestrians side by side westwards to a
less conspicuous Supervalu. Dyer street gives access outward to a purpose built multi-storey car park at is south west corner. There is one dead-end mall running a short distance southwards from West Street.

East of the centre between William Street and Laurence Street is the Laurence shopping centre, on streets not of retail origin. Scotch Hall is a newer shopping centre on the south side of the river. Both provide support to the town centre as eastern anchors.

*Dundalk*

In Dundalk, the large surface car park to the east of Clanbrassil Street, entered from a street on its south side, has no pedestrian access to Clanbrassil Street through the block edge other than through one hardware shop. It may therefore be defined as a customer car park in the first stage of a process. This relates to a similar circumstance around Johnson and Five Star car parks in Sligo in early 1970s. On the north half of the western side of Clanbrassil street, high walls that mark the boundary between inner and outer plots are unbreached, with some shored openings. Here streetward buildings have frontal archway access while the rear plots, with party-wall boundaries removed, have now been amalgamated for single use, currently derelict or forming car parks. In the southern half of this block, rear facades open deliberately on to the car park with the development of footpaths. On the North West corner of the block is a cinema, opposite which on the west is a failed shopping centre. The long walk shopping centre, with Tesco as anchor, lies just out of connection, to the south. Clanbrassil Street has a curious mix of local shops with few national anchors, although a Hughes and Hughes bookshop appears on one rear western frontage. On both sides of the north end of Clanbrassil Street, traditional archways are still used extensively for many types of access to the rear of plots.

South of Frances street, the pedestrian route through the block edge to the new Marshes shopping centre has generated a range of casual retail uses on the site-assembled courtyard or car park through which it passes.

*Dungarvan*

In Dungarvan, a new shopping centre fills the block core north of O’Connell Street and west of the Square. It contains a multi-storey car park. It links to the square in a newly created outdoor shopping street. It also links to O’Connell Street through three older minor shopping passages. None link to the shopping centre itself, perhaps because of the internal layout of the centre. Of the three, one is a single shop, having a normal plot width and a length greater than the town square, with a frontage at both ends, one to the street and the other to the newly created outdoor shopping street. Another is an exterior lane with small single storey buildings flanking one side of it to its east side, in the manner of a blindback layout. They are occupied with low-activity uses such as hairdresser, beauty therapist, tattoo artist and art studio, but are all active. The next is an indoor shopping passage, upgraded in the redevelopment of the shopping centre but significantly under-occupied. A number of intended individual units have been combined to accommodate a national chain coffee shop. Another arch from O’Connell Street leads to a courtyard which gives rear access to some of the uses in the latter two passages and the new street, in the manner of a sub block within the block crust.
In another Dungarvan block east of St Mary Street and south of Parnell Street, the core of the block accommodates a large car-park accumulated from a number of sites over time. On the south end of its west side some minor shops have developed access from the car park, but the back walls of surrounding plots on all other sides are largely blank. The car park has laneway pedestrian access to its north and west sides with vehicular access from the east.

Ennis

In Ennis both Abbey Street and Parnell Street, which form a continuous shopping route have developed public car parks behind their north side plots between the rear of plots and the river. The line along which the boundary between car park and plot has been drawn to shorten the plot depth is interesting. On the back of the Abbey street plots it follows the line of an older access laneway parallel to the street. Elsewhere and on Parnell Street however it takes this line as cue for the continued edge of the car park, where no lane had previously existed. Following this boundary, new shopfronts line the back ends of plots, forming an edge of retail frontage on to the car park. Such developed frontages are not as prevalent along the back of Abbey Street where no remaking of the line was induced. In both cases however, with contested space, a line of allocation has been established between car park and retail floorspace. The position of this line has been led by a working depth for the car park, perhaps compromising the working depth of the retail floorspace to the street.

These street sections, particularly Abbey Street, with car parking at the backs of both sides describe an interesting emerging plan form of two demi-blocks enclosing a narrow street of small shops surrounded on all sides by car parking. This in plan form is not unlike the typical suburban shopping mall. If both were abstracted to diagrams showing function, the relative place of components in each would be indistinguishable.

Ennis has retained original frontage widths to almost all plots in its three central streets. The reason for this may be related to what we have just described. To the rear of plots on Abbey Street, Parnell Street and O’Connell Street car parks have truncated and therefore sterilized the plot depth thus reducing the incidence of larger floorspace. The central area has therefore retained a dense fill of very small plots. A multi storey car park of somewhat inefficient shape fills the core of the block south of the Mall, but this is not connected to anything on the block perimeter except its own entrance. In the block north of this, and south of Parnell street, the western sector has been filled by a network of small passages serving small plots, almost all with frontal servicing, while to its eastern end the block core accommodates a surface car park. This car park is also of irregular shape and is faced by some small frontages on its north side only, which do not appear to relate to buildings behind on the street, although a large building for sale on the east edge of the car park advertises through-frontage.

The car park north of Parnell Street is faced by rear frontages of somewhat dead shops, housing uses of low activity, not helped by their north facing aspect. In the case of those to the rear of Abbey Street, frontages are lively to the north end but this does not persist to the south corner. To the east of Abbey Street the rear facades are also occupied by generally low-rent uses. The friary and a hotel tend to seal the expansion of the centre eastwards beyond the rear of its main street plots. An exception is the Dunnes stores anchor, feeding from the main street through a long shopping arcade, and linking on its outer side to a set of car parks. The Tesco store occupies a shopping centre approx 300m to the northeast, just beyond the reach of being definable as edge of centre.
Ennis retains a network of lanes running perpendicular to its central streets but these may be too frequent to develop significant footfall and have not attracted frontages, except on the purpose designed network north of the Mall. Here however some signage indicates recent out-movement (‘we have moved’). In the current economic recession lower rents on high profile street sites may be attracting some business out of less prominent locations. This is so in the case of at least one trader in Ennis.

**Enniscorthy**

In Enniscorthy, a laid-out car park to the west of Rafter Street is accessed by vehicles from Parnell road with pedestrian routes through to the street. The principal pedestrian route is a long narrow passage with no links opening on to it. Frontage buildings have opened to the car park on its north side, unlinked to plots behind them. Two of these appear to have developed front paving areas for display, the true line of the shop frontage then occurring at the rear of these. This may be generated by the need to lead pedestrians through to Rafter Street slightly north of the block core corner. No other buildings address the car park. Yards to the rear of plots on Rafter Street have opened for private service access from the car park, presenting another version of the layout model used for outdoor display space on its north side.

**Fermoy**

Despite the hilly topography immediately south of the centre, Fermoy has achieved some car parks on its slopes. One of these, south of Patrick Street, serves exclusively a shop farther east along the street. Customers use the street to access one from the other. The shop has rear service access through the car park, which is obviously on its own land. In Fermoy many of the backlands north of the main street have been filled by apartments during a recent period of tax incentives. A small carpark on the north end of Fitzgerald place is the only one north of the main street. There is no frontage development on to car parks in Fermoy.

**Foxford**

In Foxford there is a conspicuous one-way traffic system in part of the town centre. To facilitate this, a relief road runs around the back of its south-eastern block. From this a short access route leads to where a number of plots have grouped to form a car park at the back of shops which face the market square. A laneway leads to the square from the car park but the shops, and a pub, also have rear frontage to the car park. In the laneway, a jewellery shop has created small display windows, an interesting and rare instance of an attempt to enliven such a space.
**Gorey**

In Gorey, Pearse Street runs parallel to the main street at a distance of 90 metres. Some secondary retail activity has opened frontage on to Pearse Street. Pearse Street has also facilitated access to small scale car parks within the rear of main street plots. These are the beginnings of customer car parks. A large car park at the east end of Pearse Street is accessible from the main street and serves Supervalu which presents its main frontage as a single-plot shopfront to the main street. From this it extends backwards, with a car park entrance. Check-outs are located at both ends.

All of the link streets in the planned layout of Gorey (chapter 5) have retained part-residential use. Almost all of the lanes in the original plan are still clearly intact. Half way along the main street on its south side is the original market house, while the remainder of the street is retail, as planned. The plots of the whole system vary in width. On the south side a new local authority car park has been developed on a site at the junction of Market Street and Shambles lane. Access to this by both pedestrians and vehicles is via the street.

**Granard**

Granard, like Templemore has not yet crossed a threshold of activity that might induce any off-street service systems.

**Kilkenny**

In Kilkenny, as in Longford and Killarney, the laneways have served, under recent tax incentives, the development of apartments at a high density in a tight street system with facades facing each other across very narrow streets. This almost defies the spirit of the public health acts of the late nineteenth century, under which blindbacks were outlawed.

**Killarney**

In Killarney the main street north of its central junction is still largely confined to having small plots and floor plates by its dense lane structure which appears to have intensified in residential use during the boom. These lanes now contain two and three storey apartment uses over ground floor secondary retail uses. Larger plots on either side of the main street tend to be occupied by older uses, and these mainly occur close to the north end of the street, away from the bulk of retail activity. Pennys has created a large store to the east where the lanes were less occupied and plots were more easily assembled. The overall area of retail floorspace seems very ambitious although Killarney appears to support a greater quantity of retail outlets than some towns of similar rank due to its tourist activity. A large Dunnes stores closes the block north of New Street at its west end, with car parking behind. This car park is not addressed however from other edges.

A new route along the southern edge of the town centre between it and the Ross estate has opened access to plots and already-established car parks. The two car parks south of New Street have been addressed by active frontages of different types from the surrounding plots. However, pedestrian passages between the eastern car park and the main street do
not have any frontages of significance. Pedestrian activity appears to be equally diffused between them. Only the original Tesco arcade, in its cranked route to New Street, is active.

Elsewhere a new Scott street links College street southwards to East Avenue, with deep units of shops on both sides. The car park to the north of College Street fronts on to the street, with pedestrian routes through the milk market linking to the main street. The College street car park could be defined as block core or frontage. Shops on Glebe Street face it on its west side.

**Killorglin**

In Killorglin, the modern town is dominated by a new square or central space addressed and defined on its north side by a new building which houses the library, some public and cultural facilities and some retail and other facilities. An adjacent building with an Aldi ground floor and apartments above helps also to define the space. On the east side of the square, a car park occupies the core of the block between Main Street and Mill road, accessed from market road behind. On its south western boundary, with the backs of plots on the main street, a number of interesting things occur. The back lane serving main street is separated from the car park by a line of mews or thin buildings, presumably original outbuildings, some converted to new use, others not, some dual aspect to the lane and the car park. A supermarket crosses the lane and blocks it to gain a peeping frontage to the car park. On the south side of the car park is a new three storey building with retail on ground floor and apartments above, unrelated to any properties on the block edge. The car park is open to adjacent streets on the outer side of the block at Market road and Mill road.

**Kilrush**

Kilrush with its planned Vandaleur layout has a clearly readable centre. The main street; Francis street, is wide but strongly defined by buildings. It has a large area along one side allocated to parking, which Supervalu at the north western end avails of, having its front to the street. West of Henry street the mid-block core has been laid out in a core car park, entered from Burton Street and bounded on its southern edge by three storey apartment blocks, having retail units at ground floor. Here the retail units are either of low activity or deceased.

**Letterkenny**

The first stage of Letterkenny’s development from the eighties still survives, with the Tesco shopping centre as anchor at the east end of its main street and the original Dunnes stores at the west end. An intermediate stage of low-rent retail uses focusses on Pearse Road to the south which was subsequently laid parallel to the main street as an inner distributor route. Beyond and outside this, a further precinct of warehouse outlets now serves the town centre from its south west on a presumably-raised flood plain. As in Sligo a new second Dunnes Stores has located here. Although diffusive, these layered rings of land use represent a potentially strong layout arrangement for the greater town. Within this
arrangement, the structure of the main street has some interesting options. As at Wexford or Drogheda, it draws on a still-intact residential area on its north western side while yielding to a more commercially developed area to its south east, where the plots had been larger. There are not many distinctive block transects in Letterkenny. The most inventive through-block relationship is perhaps that of the courtyard shopping centre which links from the main street to a multi-level car park on its Pearse Road side, using the falling ground level to do so as in similar arrangements at Drogheda and Charleville. There are there multi-storey car parks in the linear block between Main Street and Pearse Road. The early frontages to Pearse Road had limited accommodation for perpendicular kerbside parking.

**Listowel**

In Listowel, the very regular back lane system, popular in a cluster of towns in this area, is still operational and serves as a block access route, since the plots and their boundaries on its core side are not always linked to plot boundaries on its streetward side. Plots on the core side are therefore entirely dependent on the lane for access. In almost all cases car parks avail of this core side at some location. There is little evidence of frontages facing the block core to address these. South of Market Street a building in the block core has been demolished, leaving a large area of land vacant. This has a number of potential routes through to surrounding streets and temporarily acts as an informal parking space. Supervalu occupies a large site on the north side of Market Street with a small street frontage and a large car park to its side behind other properties. It abuts, has a gate to, but does not link through to the service lane to Market Street.

**Longford**

In Longford three block core car parks in the vicinity of the main street show differing concepts in the treatment of their perimeters. Some of these are so radical that they call up the idea of a concept typology for block perimeters where incomplete fragments of very different ideas sit side by side having been led by different visions, with some that might not have been led by any visions at all. Longford has an almost full range of perimeter conditions, the civic library and Teagasc offices addressing its eastern car park with a particularly suburban vision (Chapter 9).

Houses on Chapel Lane, which has its back to the southern boundary of the eastern car park, gave their plot tails to the car park on condition that they would be able to build commercial premises at the ends of their sites. For these, the local authority exerted coordinating controls achieving two-storey back of pavement continuity. In the south west corner of this car park, the local authority paved a route for access through to the main street but the owner of the final archway through the block perimeter, withdrew his consent for its use.

Modern blindbacks appear in Longford in a laneway linking the eastern core car-park with the main street.
**Loughrea**

In Loughrea, two car parks have developed on the south side and two on the north side of the main street. The south-westerly car park is exclusive to the standalone Supervalu, with access from the street by the side of the supermarket. The mid-south car park is of medium capacity with access from Barrack Street, with no retail frontage open to the car park. The north-west car park, of low capacity, is situated behind Londis with no retail frontages other than the rear entrance to Londis. The north-east has the largest car park. At the entrance to this, from the main street, some new commercial buildings have been placed with low-activity retail on ground floor, and apartments above.

Burgage plots on the north side of the main street are still backed by the town wall, which has a moat running along its outer side, albeit shallow and narrow but with heritage value. Here the backs of burgage plots are generally underused. The wall and moat may have inhibited access for any changes of use. A walkway as amenity runs outside the moat.

**Mallow**

In Mallow, Park Road runs along the backs of the south side of the main street, opening rear access to plots on this side. Here Tesco is located, together with Lidl and a rash of small retail unit clusters with a number of shopping passages through the block. At Deal Yard Lane, Tesco faces southwards to address a car park which is flanked by a row of small retail units. Older car parks within the block have a complex relationship with some further clusters of small-order retail units to produce a framework of minor routes. Of the many shopping passages off this side of the main street one is a dead-end route of shallow units with no anchor. Here only the shop at the front with street exposure is still active. At another location the church grounds have become a car park. On the south-east end of the main street the new library has been used to animate a route through the block to a car park addressed by Lidl. The car park has no other frontages. The idea of using the other side of the distributer road as a town park is led here by the reason that the park absorbs a flood plain. Otherwise the idea is not unlike that pursued in Charleville.

In the block north of the east end of Davis Street, a number of retail frontages surround a core surface car park of limited capacity. The new shopping centre at market square has rejuvenated the activity of this area but many vacant new apartments are for sale. North of Chapel Lane the car park is surrounded by semi-fringe uses unrelated to the blocks behind them. The north side is suburban residential, the west is low-order retail, the south, as an exception, relates to the back of a distant hotel. Chapel lane is lined with low-order retail uses.

**Maynooth**

Maynooth has a regular set of small orthogonal blocks on each side of its main street which were planned as an organised unit ( ). Only the south western block is without a back access lane. Here a pub provides a small rear car park for customers, accessed from the street via a side lane. Elsewhere the block depth is consistent ( ), with a parallel back lane, which has not induced much development. The overall framework, facilitating small shops with largely frontal service and small back service areas, is very similar to that on the north side of
Edward Street in Newbridge. A small car park in Leinster Street, beyond the edge of the central frame, serves the main street at a distance of 50m. A larger car park serves the area from the opposite side of Doctors Lane; the lane serving the back of properties on the east end of the main street. This also serves a small standalone shopping centre, including a hotel, to the south side of the centre. No frontages open to its edge from the surrounding fabric.

Shopping for Maynooth is provided by two large shopping centres, one to the east of the town with Tesco and many brand names surrounding a large () surface car park but also including internal parking. The other shopping centre is newer, closer to the town on its west side, with internal multi-storey car parking, apartments and an internal shopping mall. This relates with some success to the river and to the edge of the existing urban core.

Monaghan

In Monaghan, Dublin Street has no development beyond individual plots on its north side, except at its east end. On its south side there are a number of two and three plot car parks generated by access through a common lane to their south. These have archway access for pedestrians to the street. Glaslough Street has a light distribution of retail land use. The uses which face the lake are largely unconnected to the street behind. Those on North road however are. A large new shopping centre serves the town from its south, accessed by a new inner distributor route.

Mullingar

In Mullingar, plots along the north side of the main street are deep, creating a condition somewhat like that in Longford where the distance is too great for street-edge uses to develop any frontage to their backs. Here, frontal activity on to the busy main street remains stable. Only one small shopping mall has developed; the “town centre shopping mall” has a modest car park behind, served by Carey’s Lane. No block core development has thus occurred. There is no shopping centre south of the main street.

Pennys and M+S occupy a new mall west of the town centre, Dunnes stores occupy the harbour centre north of the core, with Buckleys centre to the east. Tesco occupies a large standalone centre in the suburbs to the north-west. An office cluster has developed close to the new municipal offices to the south.

Naas

In Naas a very large shopping centre project has died while under construction on the east side of the main street. Apart from that, neither the east nor the west side of the street has developed any co-ordinated block structure beyond the original form of plots. Abbey Street forms a rear access route to the west side. A number of low-capacity car parks are accessed on the opposite side of this route.
On the north end of the town, between Sallins road and Dublin road, a large shopping centre has a central multi-storey car park, accessed from the north through a gap in its perimeter frontages. The north western perimeter is made up of shallow shop units, separated from the car park by a narrow service lane. On the east side, this perimeter is deeper. Here a short pedestrian shopping passage links the car-park lift-shaft with the street. Much of the rest of the centre is made of deep units accessed individually from its perimeter on the Dublin road. A similar Kilkenny-type open mall lies farther south on the west side of the main street, with an access at its inner end upwards to a surface carpark which is entered by vehicles from another street.

Lawlors hotel has a small shopping passage running down its south side. But this appears, with no inner destination, to have died, although its streetward units appear as is common to have survived. South of this, along Friary street is a small courtyard office park. In the area of Johns Lane a number of surface car parks form a large facility, although they are unconnected, thus not usable for combined-choice parking. On to one of these a small shop/bakery has established frontage.

Navan

In Navan the centre block north of Trimgate Street, originally a large block, has filled to include many sub-conditions within its core and in its relationship to surrounding streets. Kennedy Street has become established as a new street as has the urban space into which it expands to its south, as have a number of new streets running northwards from it. The shopping centre has two main entrances beyond which its edges make little contribution to the outdoor spaces. The facades which address the square from its south side are coordinated in line but not in style. Some belong to short backland site segments purchased from surrounding plot tails and a small number connect through to the streetward ends of their original plots on Trimgate and other streets. A Dunnes stores branch, on an inefficient site shape is one of the few through connectors. Unfortunately it offers no façade contact with Trimgate lane which forms its western boundary.

The east end of Kennedy square is a complex mix of frontages and platforms as various ideas from various periods attempt to present themselves together. Here the desire line through to Trimgate Street is quite active, and occupied for much of its length by McDonalds. A series of pedestrian routes running north from the east end of Kennedy street start with a small eclipsed car park and attempt to link with Watergate street through a number of laneways, the first of which is successful, but these grow short of retail uses towards Rafferties lane which, though a through route, has no flanking uses.

South of Trimgate street, Bakery lane and Cornmarket are active routes to the Fairgreen but, although recently developed with new buildings, have only secondary uses in occupation.

Nenagh

In Nenagh, on the south side of Pearse Street a number of pedestrian ways have developed through to its rear, such as Friars court and Friars way. These link with Abbey street which in turn has a number of small car parks of limited capacity opening from it and which eventually opens to large areas of parking around the derelict O’Connor shopping centre.
Cecil Walk leads from Mitchell street south to a surface car park in the shambles area. This car-park is addressed and claimed by recent residential use surrounding its other sides. Much of the area follows the diverse grain of the original shambles. In some locations there are purpose-built ground floor retail uses but these are marginally occupied.

In the block between Silver Street and Mitchell Street north, a new car park has been laid out with medium capacity. It has a very tenuous pedestrian link to Silver Street via a cranked laneway on to which a small Chinese food outlet opens at the car park end.

The back laneway running parallel to Pearse Street, on its north side, is addressed by a number of hardware and timber supply sheds, all active. On the east side of Mitchell street south are a number of private or customer car parks accessed by archway from the street.

Newbridge

In Newbridge the two sides of the main street; Edward street, are morphologically different. The south side originally occupied by army barracks is an area of large plots with broad land use footprints while the north side is one of intense traditional fabric with traditional plot widths. On this north side however there is no development of rear systems beyond the original plot structure, except on the extreme eastward block, which has a small core car park. Many of the plots are serviced from the front only and some are juxtaposed against dense residential land uses perhaps having origins in Newbridge’s role as a garrison town. This area has also been recently intensified by new apartments and small houses.

On the south side of the main street the Whitewater shopping centre is separated from the street by an older set of retail units, accessed from behind by a narrow service wedge between it and the face of the shopping centre. Close by, Pennys achieves street frontage but with a service area which also requires to be accessed from the streetward side. Farther to the east a Jervis-model shopping centre sits between the street and a large surface car park, the latter having two uncovered entrances on both sides of the former.

Immediately west of the Whitewater centre is an earlier outdoor shopping centre focussed on a square which forms a surface car park surrounded by shallow shops with frontal service access. On the streetward side of the car park the units have dual frontage to street and square. On three sides of the square the buildings are of two storeys with non-retail rentable space above, one of them occupied by an educational facility. On the fourth side a multi-storey car park occupies the upper levels accessed from the square via ramps beside shopfronts. Because of the limited shopping depth most of the units are occupied by at best middle-range shops, capitalising on the next-door presence of Whitewater.

Both Lidl and Dunnes stores occupy sites in the same mega-block, having frontal access from surface car parks, access to Dunnes being through a small shopping mall.

Newcastle-West

The centre of Newcastle West is made of narrow streets which reduces their usability for on-street parking. Perhaps it is this that has led to an unusual proliferation of off-street surface
car parks, although these are scattered and not easily readable. The core car park in the block to the east of the main square is the most active, entered by a route from Bishop Street. A number of retail units have fronted on to this. They are somewhat scattered in their definition of the space, but the south east side is strongly defined by a block with retail use on ground floor and two floors of apartments above. This is the side which would not have been defined by the original town. The position of this building restricts and limits the car park size. An annex to this car park however has recently opened to serve a new Supervalu store which has opened on its south corner. This store has replaced an older Supervalu on the north side of Bishop Street, which had been served from behind by a series of interlinked car parks. These are linked to Bishop Street by a pedestrian route, which is narrow and flanked by dead or low-rent shops. The car parks have differing charges according to their convenience.

*New Ross*

In New Ross a car park off Lady Lane, between South street and the Quay has both shallow edge plots and through plots fronting on to it. Although its total capacity may be quite low as a footfall generator, the through passages which link the perimeter streets across it appear to generate activity.

*Portumna*

Portumna’s Supervalu, the town’s main retail hub on the south side of Clonfert Street, has a car park behind which is accessed from Abbey Street.

*Roscommon*

In Roscommon the east and west sides of the main street have contrasting recent histories. The block on the west side is in almost its original state. On the east a core car park has developed. The shops of the main street have responded and address this. Two shopping passages have developed linking the car park to the main street. Both have anchor stores at the car park end, and a new Tesco has opened addressing one edge of the car park. On the opposite side of the car park is the cattle mart, and in an interesting relationship, it provides a further anchor destination drawing activity through the shopping passages on fair days, not unlike a similar arrangement at Castlerea.

*Roscrea*

In Roscrea the main street has held the two main convenience anchors for a long period. On its west side, the Supervalu fronts the street bounded by a large car park behind, accessible from adjacent streets by Gantly road, a new route developed and supported by the local authority. This road has now attracted a number of transect structures through the half-block to the developing car parks and some frontages have developed to lane routes and to the
car parks themselves. On the east side of the main street, a shopping centre anchored by Tesco sat in the block core just behind the yard line of Main street and adjacent Castle street, with links for pedestrians to both of these streets and with a desire line to car parks behind. Recently however, a new Tesco has uncoupled from the other shops and now stands alone approximately 100m to the east with its own underground car park. This has had an obvious effect on the remains of the shopping centre. The situation has similarities to that in Clonmel.

**Sligo**

Sligo has retained most of its convenience and comparison goods shopping in or close to the centre. The central streets describe a figure of eight on an east west axis. This encloses two large blocks. A river runs through the eastern block while the western block has developed a set of core car parks serving a number of anchor stores on its perimeter, including Tesco and Dunnes Stores. A number of passages of smaller shops link this core eastwards to the principal streets. The older town to the south east has in recent years seen a migration of retail uses north westwards to larger land plots which have been vacated by the outward movement of industrial use. The retail core has recently expanded in this direction to include the Quayside shopping centre, which has a multi-level car park.

**Swinford**

In Swinford, Pound lane is the service lane which served the backs of Market street plots to their south. On the south side of the lane is a car park, served from its south by an entrance from Davitt place. There is no charge in this car park. Like Castlerea, Swinford appears to have a plentiful supply of on-street car parking spaces to serve its activity. Two other rear car parks exist, one between Bridge Street and pound lane, and the other between Main Street and Brookeville. The deep service structure laid out for the central blocks of Swinford in the nineteenth century has never been developed. In at least three of the plots between Market Street and pound lane to its rear, access has been opened from the lane with small signs at the lane end advertising this access to customers, even though such access requires a short walk through the property to the back door. Some of Swinford’s back lanes from its nineteenth century structure have become almost streets in themselves though still with small or secondary frontages.

**Swords**

In Swords, on the east side of the main street, a particular layout typology has developed on some plots and plot assemblies. A building is placed on the street end, through the centre of which a passage or archway leads to a long wide outdoor forecourt perpendicular to the street lined with shops on both sides, with apartments above having sometimes an upper access walkway. This leads at its rear boundary to a service road which links the backs of all properties as a secondary street, and gives access to car parks on its other side. There are at least four of these mall types, of different style but similar form. They are similar to another at Teeling Street in Ballina. Underground car parking appears in some also, although the Main street in Swords is still at the early stage of transformation from two storey village buildings to four storey urban fabric.
On the other side of the main street behind its North West end is the castle shopping centre. Here an outdoor line of shops with various commercial uses above, sits on the westward side of an open car park accessed from Bridge Street. There is no frontage on to this car park from the backs of plots on Main Street. Elsewhere on this side of Main Street, some premises have small car parks behind.

The shopping needs of Swords and its region are largely catered for by the Pavilion shopping centre, close to the southern edge of the town core. All of the town's national brand stores are located within this.

Templemore

Templemore is a complete front-facing town with parking catered for in its main square. There is a concentration of convenience retail in the south west corner of the square. There are no off street car parks of significance.

Thomastown

In Thomastown, the central space in the central block is a laid out square of hard landscape on to which a number of designed buildings face, accessed through a broad archway from Logans street.

Thurles

Thurles has a number of surface car parks fronting directly on to the street system both in the square and in streets close to it but no significant backland development. The car park therefore feeds from the street without introducing any structural alteration to the block layout, other than site assembly. One car park lies opposite the supermarket in the main square, with shoppers trolleys crossing the street.

Tipperary

In Tipperary the practice of having car parks in an adjacent block to that occupied by the Supervalu is evident on each side of Kickham Street. Here, to the east, are a number of surface car parks. They do not link together as a single choice facility. The new Supervalu appears to be attempting to form an outer back edge to the block.

North of Main street there are three distinct types of surface car parks. The market place car park appears to double as a market space, with no significant off-street frontages apart from some purpose-built market buildings which open from the opposite side of a street which flanks its east side. Next door is a customer car park serving the bank on the main street. This is walled from the street and locked after hours. Some distance to the east is a third car park, fronting on to street and addressed by a Lidl
in a layout that is conspicuously suburban within an urban fabric. It may have been planned with the dual role of providing parking facilities for the municipal swimming pool to the east.

South of O’Brien street are two further customer car parks, one to a pub and one to a hotel with street entrance adjacent to each, one of them from bridge street. Tipperary is a heritage town, with a valuable built resource but a low level of current prosperity.

_Tralee_

In Tralee the block south of the Mall between Denny Street and Godfrey place has been significantly adjusted in a sequence of structural or layout alterations. Mary Street now collects a series of surface car-parks accessed from the south and linked, by small scale pedestrian streets, to the original square on the north end of the block. The eastern one of these, Abbey Street, follows a strong pedestrian desire line and is successful and active. Here a Tesco anchor store and a number of active shops form a back to the original buildings on Denny Street. This combination has become a smaller block with a core access lane serving both the older backs on Denny Street and those of Abbey Street to the west. Effectively the shops on the west side of the new street have maintained a space behind which a private zone still exists which is not part of the car park allocation, thus preserving the potential option of backup to the new street frontages. Some further frontages have opened to the south end of Mary Street but these are of second grade retail use. Some pedestrian routes filter through from Denny Street to the square.

The sequence from access road to car park, to large anchor, to smaller shops, is managed in a number of instances. Supervalu, predictably locates directly on to the hub of Russell Street/rock road backing on to a large block core car park, accessed from Matt Talbot road. Supervalu controls the car park and there are no other frontages on to it. A smaller car park to the north of it accessed from Pembroke Street does not connect.

Similarly, north of the west end of the Mall a standalone multi-storey car park, accessed by vehicles from Maine street to its north, serves here not an anchor store but the outer end of a complex of outdoor and indoor streets, filled with minor retail uses linking through to the west end of the Mall. This does however include a jaded shopping centre strategically located but filled with units which are small and of marginal activity.

North of and slightly removed from the town centre, a shopping centre anchored by Dunnes stores occupies the site of an old railway station, served by a large surface car park. This in its relationship to the centre is not unlike the location of the Dunnes stores in Cranmore, Sligo. In the case of Tralee, a particular counter-attraction is the presence of Debenhams approximately a half kilometre east of the edge of centre. Predictably, a number of shops have collected around this anchor. Much of Tralee’s hinterland is to the east along the principal routes to elsewhere.

East of Denny street and south of the mall a car park with access via Park lane appears to be efficiently positioned in the block core to serve shopping in the town centre in tandem with services in the adjacent church. The backs of plots to surrounding streets are still intact. A multi-storey car park off Edward Street serves the Mall just north of its east end. South of this a twentieth century school complex, surrounds a centre-block space in an interesting variation on the process under scrutiny.
**Tullamore**

In Tullamore the block south of Harbour Street has Market Square as an original core space. It is a rare example of an historic block core space unrelated to the spatial continuity of the surrounding streets. Although its northern and southern boundaries form the ends of plots focussed on surrounding streets, the activity in these shows little sign of reverse frontage to the square. There are linkages between the west side of the Square and Columcille Street in at least two premises. One of these is a modest shopping arcade in a former single store.

On the west side of Bridge Street a shopping centre anchored by Dunnes Stores enjoys prime activity due to its central location. The rear end of its mall leads to a surface car park centred on the new Tara Street, the other side of which is fronted by residential blocks, a hotel and the river. As in Nenagh the future flexibility of this core concept is somewhat reduced by the presence of residential use on the other side of the surface car park. Beyond the river, ‘Main Street’ is a newly created, incentive-led, urban quarter containing many newly built ‘old buildings’. Ground floors here are filled by low rent uses but apartments above are fully occupied. This ‘stone warehouse’ character of this development appears to have been inspired by the presence of an original industrial complex at its north end, although this complex has not itself been restored and remains derelict. The new quarter appears to be awkwardly remote from the central shopping activity of Bridge Street.

The centre block between Columcille Street and Water lane contains a surface car park with unfronted laneway access to both of these streets. This core has reached an interesting stage. Shops with both through linkage and individual frontage had opened to the car park in the recent past but have closed. This may have been induced when activity moved south to the Bridge street shopping centre, or more particularly when Tesco as anchor vacated its site on the car park perimeter. Tullamore’s focus of retail activity is very local. Columcille Street quickly dies north of Harbour Street and Bridge Street quickly loses its retail activity south of O’Connor square, albeit to attractive domestic architecture.

**Waterford**

In Waterford the south east end of Georges street is served by a series of low capacity surface car parks in a hilly area of restricted ground plates around Jenkins lane. These have pedestrian links to the central spaces of the city by existing streets and by one access lane to Georges street, but no facades are presented to the car park. This absence is perhaps due to the fact that restrictions on the car park sizes prevent any of them from achieving a critical mass of pedestrian activity and it is therefore not attractive for retail uses on perimeter streets to open frontage back to them. Some small national chains do exist in the block.

In the block between Georges street and Broad Street a shopping arcade of small units fills the block with links to three streets. In the block south of Alexander Street a multi-storey car park successfully fills the block core as in Ennis. The Arundal shopping centre has a large multi-storey car park and the quays provide many parking spaces close to the city centre.

**Westport**

The four central blocks of Westport have interesting variations of the same constant. All have a central car park. The block sizes however are tight by common standards. All car

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parks strive to be rectangular but only one succeeds. Shops do not open directly to car parks through the plot ends, but they do open to some pedestrian passages, which penetrate the block with some success as spaces.

Wexford

In Wexford, the car park behind St Iberiuses church is addressed by many frontages from the surrounding block, including two banks, but in a somewhat uncollected manner, similar to Carlow. However as in Carlow the local authority has attempted to collect the space with hard landscape enhancement works. There are many different transitions of contact between façades and spaces around the edge.

In the car park behind Redmond square, no commercial facades have opened inwards, the edge being one building thick, but a medical practice does face the car park availing of drop-off potential.
APPENDIX 4

LIST OF 58 SAMPLE TOWNS IN BRITAIN CARTOGRAPHICALLY EXAMINED  (Chapter 6)

While all of these towns were studied in order to support the discussion and conclusions of Chapter 6, not all are individually referred to in that chapter.

Alloa
Ashford
Barnstaple
Bedford
Brackley
Castle Douglas
Chelmsford
Chester
Chesterfield
Colchester
Corby
Dorchester
Dumfries
Elgin
Evisham
Exeter
Farnham
Greenock
Harrogate
Hartlepool
Hawick
Hereford
Honiton
Irvine
Jedburgh
Keswick
Kilmarnock
Lancaster
Leominster
Lewes
Lichfield
Ludlow
Lymington
Nantwich
Newmarket
Northampton
Oakhampton
Peebles
Penrith
Perth
Peterhead
Petersfield
Poole
Ramsey
Ripon
Salisbury
Sevenoaks
St.Ives
Sudbury
Tamworth
Taunton
Tregoney
Truro
Warrington
Wetherby
Worcester
Wrexham
Yeovil
## APPENDIX 5

### PLANNING FILES CONSULTED (Six case study towns listed in alphabetical order)

### BALLINA

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Accessed; 03/14

Note; In Sligo files, the first two digits of the file number do not necessarily relate to the year of initial submission. This date is listed in column three, from where the chronological sequence may be taken.

(Sligo 0670043, missing at second search, assumed to be superseded by 0670147)
APPENDIX 6

Conversion formulae for access to files re-numbered by County Councils following the Local Government Reform Act 2014, as outlined in Chapter 3 (3.04.01).

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<th>Town</th>
<th>Current Council</th>
<th>To</th>
<th>Formula Description</th>
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<td>Mayo County Council</td>
<td>After the first two digits, insert 70 followed by the remaining original numbers</td>
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<td>Example: 062799 becomes 06702799</td>
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<td>Tipperary County Council</td>
<td>Numbers unchanged</td>
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<td>Longford</td>
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<td>Longford County Council</td>
<td>After the first two digits, insert 7, followed by whatever number of zeros is necessary to bring the total number of digits to eight</td>
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<td>Example: 04156 becomes 04700156</td>
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<td>Example: 1332 becomes 1370032.</td>
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APPENDIX 7

List of issues under which planning files were rejected as not relevant (Chapter 10)

PLANNING APPLICATION TYPES CONSIDERED NOT RELEVANT

Replace or erect signage to front of Building
Relocation or insertion of ATM
Security grille to shopfront
Front window alterations
Extension of opening hours
Installation of air-conditioning units to existing building
Provision of fire-exit doors from building to on-site area
Change of use within existing building
Alterations to existing shopfront
New signage on façade or shopfront
Erection of signage to shop
New Shopfront
Replacement of first floor windows on façade
Erection of satellite dish
Installation of roof mounted antennae or mast mounted equipment
Disabled access ramp and steps to front of premises
Replacement clock on façade
Works clearly embracing façade only
Erection of awning or cotton canopy
Roof antennae
Erect telephone kiosk
Erection of temporary site office
Re-roofing of building using different materials or roof form
Change of use from office space to private members card club

Where any of the above titles included "and ancillary works" these were further examined before dismissal
ACLARE
ARDNAREE
ASHBOURNE
ATHENRY
ATHLONE
ATHY
AUGHRIM
BAGNALSTOWN
BALBRIGGAN
BALLAGHADERREEN
BALLINA
BALLINASLOE
BALLYBOFEY
BALLYBUNNION
BALLYCASTLE
BALLYGAR
BALLYHAUNIS
BALLYJAMESDUFF
BALLYMAHON
BANDON
BANTRY
BELMULLET
BELTURBET
BETTYSTOWN
BIRR
BOYLE
BRAY
BUNCLODY
BUNCRA  NA
BUTTEVANT
CAHER
CAHERSIVEEN
CARLINGFORD
CARLOW
CARRICK ON SUIR
CARRIGALINE
CASHEL
CASTLEBAR
CASTLEBLAYNEY
CASTLerea
CAVAN
CELBRIDGE
CHARLESTOWN
CHARLEVILLE
CLANE
CLIFDEN
CLONASLEE
CLONMEL
COLLOONEY
CORK
COURTOWN
DONABATE
DONEGAL
DROGHEDA
DRUMAHAIR
DUBLIN
DUNBOYNE
DUNDALK
DUNFANAGHY
DUNGARVAN
DUNLAOGHAIRE
DUNMANWAY
DUNSHOUGHLIN
EDENDERRY
ENNIS
ENNISCORTHY
ENNISTIMON
FERMOY
GALWAY
GOREY
GORT
GREYSTONES
KENMARE
KILKEE
KILKENNY
KILLARNEY
KILRUSH
KILTIMGH
LAHINCH
LAURENCEXTOWN
LEIXLIP
LIMERICK
LISTOWEL
LONGFORD
LOUGHREA
LOUISBURGH
MALAHIDE
MALLOW
MAYNOOTH
MILLTOWN MALBAY
MILSTREET
MITCHELSTOWN
MONAGHAN
MONASTEREVIN
MOVILLE
MULLINGAR
NAAS
NAVAN
NENAGH
NEW ROSS
NEWBRIDGE
NEWCASTLE WEST
PASSAGE WEST
PORTMARNOCK
PORTUMNA
RATHMULLEN
RATHOATH
ROSCARBERY
ROSCOMMON
ROSCREA
ROUNDSTONE
RUSH
SALLINS
SCARFF
SHANNON
SKERRIES
SKIBBEREEN
SLIGO
SWINFORD
SWORDS
THOMASTOWN
THURLES
TIMOLEAGUE
TIPPERARY
TOBERCURRY
TOWER
TRALEE
TRAMORE
TUAM
TULLAMORE
WATERFORD
WESTPORT
WEXFORD
APPENDIX 9 ADDITIONAL TOWNS OF RECENT DEVELOPMENT

Settlements, of 3000 inhabitants or more in 2011 which have not been prominent in the 1911 based analysis, due to their more recent expansion.

These were added to Rank F, as referred to in Table 3007, Chapter 3,

Five were subsequently identified as of morphological interest, and were carried to Rank D (These are here identified with a D).

SWORDS 27175 (D)
CELBRIDGE 16016
LEIXLIP 15016
MALAHIDE 13826
GREYSTONES 11913
CARRIGALINE 11191
BALBRIGGAN 10294
SKERRIES 9149
SHANNON 8561
PORTMARNOCK 8376
TRAMORE 8305
RUSH 6769
ASHBOURNE 6362 (D)
BETTYSOWN 5597
DUNBOYNE 5363
BUNCRAENA 5271 (D)
PASSAGE WEST 4595
EDENDERRY 4559
CLANE 4417 (D)
NEWCASTLE WEST 4017 (D)
DONABATE 3854
RATHOATH 3794
DUNSHOUGHLIN 3063
TOWER 3032
APPENDIX  10
INTERVIEW QUESTIONNAIRE

We are studying change in the use of the urban block

(Quoting by respondents of examples is encouraged throughout)

Two maps are placed on the table:
Typical block layout (Clonmel 1951)
Same block layout (Clonmel 1999)

A1  Is the block changing  ?

Is the layout structure changing  ?

A2  If yes, from what  ?

Are there elements which were there and have gone  ?

A3  To what  ?

Are there common things emerging which were not there before  ?

What will it look like if change continues  ?

B1  Should this change be encouraged  ?

Why  ?

By what incentives  ?

Have incentives been anywhere attempted  ?

C1  Should this be controlled  ?

Why  ?

By what instruments  ?
Has control been anywhere attempted?

D1 (2) What is the likely future consequence of the current process of change?

Capacity?

Does a surface car park have limited capacity?

Does change affect the street?

Does the street or the car park attract different types of shops?

Have new building types emerged?

D2 (2) What is the ideal (contact framework) for town centre land uses?

What represents an ideal contact domain for the seller or buyer in the layout of town centre?

For comparison goods?

For convenience goods?

For goods of any specific type?

What are the ideal conditions for a commercial plot?

Edge contact?

Internal trading layout?

Access?

Support space?

Position within (operational structure) of town centre?

F1 Are there particular regulating controls which consistently inhibit the development of (ideal) building form on the common street-fronting plot? (rank in order of impact)

Trader ideal?

Common good ideal?
G1  Is a clear distinction between front and back important ?

For trading ? Why?

For residence ? Why?

For the customer or user of the town ? Why?
Maps used in interview elicitation

BALLINA 1911

BALLINA 2014
LONGFORD 2010 (including proposed developments)

ROSCOMMON 1911
SLIGO 2011 (including proposed developments)
# APPENDIX 12

Table of Interviewees  (final six columns indicate associated case study towns)

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(Interviewees have been anonymised in text references by the use of R numbers. Cross-reference list is retained by author.)

APPENDIX 13

Pilot towns included with 66 in surveys of current state, (Chapter 3) also visited

Ballybofey
Ballygar
Ballyshannon
Callen
Castleisland
Celbridge
Foxford
Granard
Killorglin
Letterkenny
Portumna
Templemore
GLOSSARY OF TERMS

Terms commonly used throughout, but not explained in, text.

**Anchor store;** A large retail unit, generally of regional or national identity, used to attract shoppers to a shopping centre of smaller stores.

**Arterial (route);** Relating to a transport route of high importance

**Back lane/access;** (ISUF) “A minor routeway in the street system, originally used to gain access to the rear of strip plots. In many towns the back lanes have been widened for the modern requirements of the car, owing to the creation of separate tail-end plots”.

**Back-of-Pavemant Façade;** Façade of a building which sits on the front boundary line of a plot, without any setback space between street edge and building.

**Bastide;** (ISUF) “A fortified small town, of late medieval origin, usually on hill-top site, most common in France”.

**Bianconi Coach Service;** (Killen) A national network of horse-drawn passenger coaches which served most of Ireland, developed by a Clonmel-based entrepreneur Charles Bianconi (1786-1875). In the nineteenth century it became a feeder service to the emerging rail network.

**Bilateral rear lane;** A service lane running along the spine of a block, serving the backs of plots on both sides. Conzen (1988 p267) refers to its existence in thirteenth-century Gascon towns.

**Blind-back;** (ISUF) “A dwelling, usually a terraced house, that lacks rear windows or access. Its rear wall is usually along a plot boundary”. This house type was banned by health-related bye-laws in the 1880s

**Blind Quay;** A street, generally parallel to, and one shallow block away from, a waterfront, which formed an earlier water’s edge before the making of a quayside to river or harbour. Irish examples exist at Exhange St. Lr., Dublin and Coffeehouse lane, Waterford.

**Block / Urban block;** (see street-block)

**Block Core;** Area in the centre of a block, comprising the backs or tails of its perimeter plots, which is not part of the built perimeter frontage structure. It often contained the original garden space of frontage plots and is frequently referred to as ‘backlands’.

**Block Fragmentation;** Break-up of urban block by the creation of excessive public routes across its core.

**Block inversion;** Where the activity of the surrounding street, addressed originally by the block edge as frontage, migrates to the core of the block causing the block to turn inside out, having frontage to the core and back to the street.

(authors terminology; see 8.05.02)
Block metamorphosis; A process of gradual change in the form or function of an urban block

Burgage; (ISUF) “An urban strip-plot traditionally held by a burgess in a medieval borough and charged with a fixed annual rent as a contribution to the borough farm (firma burgi) or a communal borough tax of the town” (Conzen)

Burgage cycle; (ISUF, Conzen) Process by which a plot, in its development gradually fills from having just an initial frontage building to having total coverage by additional buildings at which it has reached its point of climax, generally followed by a clearance and total single re-coverage at a larger scale of use

Comparison goods; Goods, purchased infrequently, from a range in which competitive variety exists, where the buyer considers choice before purchase. Examples are clothes or furniture.

Convenience goods; Goods of a service nature, purchased frequently, where the buyer does not normally source variety of product before purchase. Examples are groceries or petrol.

Conzenian; (ISUF) “Pertaining to, or characteristic of, an adherent of the doctrines of M.R.G. Conzen”

Core; (see block-core)

Core Saturation; A situation where a block core becomes congested or filled by its built form or activity such that there is no remaining room for adjustment or expansion of use within it. Unlike the street and its plots, the block core is spatially restricted by its edge or perimeter structure while the edge structure is restricted by the filled core. (authors terminology; see 8.07.01)

Core strategy; (planning terminology) A Development Plan Document that sets out the key themes, vision and goals for spatial development, together with the strategic objectives of the planning framework for an area and the core policies to deliver these objectives.

Dendrochronology; The study of annual growth rings in trees or wooden objects using the growth patterns induced by climatic variations, applying techniques of alignment to compare timbers of unknown date with those of known date as a method of dating timber.

Derivative plot; (Conzenian terminology) “A secondary plot carved from a parent plot by partition” (Conzen, 1969, p. 124). This division may be by truncation, medial division or other form of partition. (Larkham and Jones 1991 p35)

Development control; (planning terminology) The formal administrative planning process through which regulatory aspects of the development of land are considered and monitored. It is usually identified as separate from other divisions of spatial planning such as strategic planning, policy planning and plan formation.

Double loaded plot; (ISUF) A plot which has frontage through both its head and tail boundaries, often occurring when an original laneway at its tail end develops to become a street.
**Figurative architecture:** Term used to describe an architecture of the post-modern movement of the 1970s, influenced by Graves and Krier, which attempted to reintroduce individual classical elements in a mannerist form as a counter-reaction to their rejection by the preceding modern movement.

**Fixation line:** (ISUF)(Conzenian terminology) “The site of a linear feature that has, at some time, provided a barrier to development. Fortifications, such as a town wall, mark the traditional stationary fringe of an ancient town. During subsequent growth of the settlement it forms a line between the intra-mural and proximal extra-mural inner fringe belt. Fixation lines may also take the form of physical features such as rivers; man-made features such as railways; or even intangible features, e.g. local authority planning area boundaries, parish boundaries or the pattern of land ownership. As economic, social, demographic and political pressures for urban development exceed the barrier of resistance formed by a fixation line, the town will expand beyond its confines. It is usual that this urban fringe is of a lower density and of more open form than that part of the town inside the fixation line. Even when the physical structure of resistance is removed, forms on the ground tend to reflect the line of the barrier (for example, annular streets follow the line of walls).”

**Frontage:** (ISUF) “The interface between main access street, or waterway, with the boundary of a plot. It is measured as the length of street line taken up by it” (Conzen, 1960).

**Goad map:** The Goad mapping company(established in 1874) produce large scale urban plans of buildings and building groups, for use by fire insurance companies (initially in Britain and Canada, but recently worldwide) showing detailed layout information required for risk assessment.

**Graphic elicitation:** Use of graphic or photographic images (in an interview) in order to focus an understanding (by the interviewee).

**Grid plan/gridiron layout:** A rectilinear layout of streets and street-blocks.

**Half-block:** (see un-closed block) where a block remains unclosed by parallel streets, addressing a street on one of its edges with one line of plots having a tail seam which is not met by opposite rear plots facing an opposite edge street. Where a town has a single street as spine, this street will have half-blocks on each side. (authors terminology; see 2.10.00)

**High street:** Principal street of a town in Britain, generally referred to in Ireland as Main street

**Inverse:** (see block inversion) Opposite in position, direction, order or effect.

**Land-locking:** When the expansion of, or access to or from, a plot is compromised by the expansion of an adjacent plot around more than one of its sides.

**Local authority:** Municipal or rural authority having responsibility for functions such as service provision and planning.

**Map regression:** “Method used to visualise the process of formation and transformation of a settlement over time by a chronological sequence of images, usually historical plans or maps” (Kropf 2017 p60), sometimes referred to as ‘cartographic time series’.

**Metamorphosis:** Change in form or nature. In the case of an urban block this can be taken to have occurred where a block, originally having a core of private plot tails serving
respective plot frontages which in turn served the surrounding streets with retail frontage, changes in urban function, no longer having such elements in such relationship.

**Metrological analysis**; (ISUF) Analysis of settlement plans by detailed measurement of plot sizes, preferably using existing surviving plot boundaries but which may also be carried out using old large-scale plans; analysis of regularities in plots in terms of fractions or multiples of old units of measurement.

**Modal transfer**; Transfer by the user from one mode of transit to another, such as when a bus passenger disembarks to become a pedestrian, or when a motorist parks a car and boards a train.

**Morphogenesis**; (ISUF) “The creation of physical forms viewed as a developmental or evolutionary process” (Larkham and Jones 1991 p54)

**Morphology**; (ISUF) “The study of form; the history of variation in form (first use 1885); term used by Goethe (Wilkinson and Willoughby, 1962). Thus, urban morphology refers to ‘the study of the physical (or built) fabric of urban form, and the people and processes shaping it’ (working definition advanced by Glossary editors). Use in English in this context dates at least to Leighly (1931). In urban design, the term is principally used for ‘... a method of analysis which is basic to find[ing] out principles or rules of urban design’ (Gebauer and Samuels, 1981); although they also note that the term can be understood as the study of the physical and spatial characteristics of the whole urban structure: this is closer to the geographer’s usage”.

**Morphotope**; (ISUF) “The smallest urban localities obtaining distinctive character among their neighbours from their particular combination of constituent morphological elements” (Conzen, 1988). “These elements consist of the characteristics of plan type, building type and land use (Conzen, 1975). A morphotope is essentially the smallest type of morphological region. Example would be a terrace of identical houses”.

**Operational structure of town**; Recognisable structure or working mechanism under which land use, circulation and urban form interact with each other in the operation of a town. (authors terminology; see 14.03.02)

**Orthogonal plan**; A spatial plan whose elements or components relate to each other at right angles, or with perpendicular or parallel lines of direction, such as in rectangles.

**Perch**; A unit of length in imperial measurement equal to five-and-a-half yards or 5.03m.

**Plan seam**; (ISUF; Conzenian terminology) "A line dividing genetically different parts of a town plan" (Conzen, 1969). “Adjoining layouts, developments of different morphological periods, and plan units, townscape regions or, at the smallest scale, morphotopes, will be divided by plan seams”.

**Plot**; (Conzenian terminology) “A parcel of land representing a land-use unit defined by boundaries on the ground” (Conzen 1969 p128) (Larkham and Jones 1991 p64)

**Plot accessory**; (ISUF Conzenian terminology) A building associated with the land use of the plot but not the primary or plot dominant building on that plot. Plot accessories are usually in the ‘garth’ or garden at the tail of the plot. In the medieval town, accessories would have originally been subsidiary buildings to the mercantile function of the plot (Conzen, 1960, pp. 31-32) (Larkham and Jones, 1991 p64)
Plot amalgamation; (ISUF Conzenian terminology) A process typical of the burgage and redevelopment cycles. Occurs when the requirements of a society become different from those existing when the areas were originally laid out (Larkham and Jones p64)

Plot dominant; (ISUF Conzenian terminology) "The main building associated with the land use of the plot" (Conzen, 1969, p. 128). In medieval towns the plot dominant most frequently occupied much of the street line at the plot head. The remainder of the strip plot would contain subsidiary buildings or plot accessories (Larkham and Jones 1991 p65)

Plot pattern; (ISUF) "The arrangement of plots - considered separately from other plan elements - up to the level of street blocks. Areas of homogenous plot pattern may result from a laid-out plot series or formal layout, the constraints of the morphological frame or planning controls".

Plot series; (ISUF) A row of adjacent plots that share similar building line and development characteristics.

Plot severance; Plot truncation; Shortening of a plot by disposal of part to a different use or ownership.

Plot tail; (ISUF Conzenian terminology) "The larger but usually less important rear part of a strip plot, rarely occupied by a plot dominant" (Conzen, 1969, p. 128). “This area, which typically has poor access, is developed to a much lower density than the plot head, and contains plot accessories and the garden”.

Repletion; (Conzenian terminology) The gradual intensification of building density in an existing plot pattern. Secondary buildings can be additional plot dominants on derivative plots (alongside the existing back lane). Alternatively, repletion takes the form of new plot accessories which develop with the socio-economic requirements of the occupiers through time.

Repletive absorption; (ISUF Conzenian terminology) “Transgression of plot boundaries and absorption of adjoining plots by an intensified and growing land use, accompanied by corresponding building transgression and expansion of the plot dominant” (Conzen, 1969, p. 129) (Larkham and Jones, 1991,p70)

Residential diffusion; Process (induced by car ownership) by which traditional residents of a town or nucleated settlement move outwards to a new place of residence in the countryside at a distance from the town, using the town as a service centre only. (authors terminology; see 8.03.01)

Retail interface; zone of contact between retail trader and customer

Street-block; (Conzenian terminology) A group of plots bounded by street lines (Conzen 1960 p5) (Larkham and Jones 1991 p74).

Street line; (Conzenian Terminology) The line dividing street space from adjoining street-blocks (Larkham and Jones 1991 p74)
Tail-end plot; (ISUF Conzenian term) “A derivative plot occupying the tail of a parent plot, being the result of plot truncation in the former”.

Tail seam; The tail boundary of a plot, common to an urban seam on the edge of a morphological region or plot series.

Tenement; (ISUF) “Building type; An industrial block of flats or apartments, usually of up to three storeys. Access to the flats is obtained by a series of staircases, each common to several flats”.

Townscape; The distinct art of relationship in architecture between buildings, spaces and contributing elements of visual urban form, embracing such devices as closed vista, deflection and serial vision, developed in theories such as those of Sitte (1889), Worskett (1969), and Cullen (1959,1971).

Transect; (ISUF) “The transect approach is a planning strategy that seeks to organize the elements of urbanism in ways that preserve the integrity of different types of urban and rural environments relative to a continuum that ranges from rural to urban, varying in their level of urban intensity. It may also be applied across the urban edge between differing urban forms and use”.

Tunnel-back dwellings; (ISUF) “Terraced houses, most often of the late-Victorian or Edwardian periods, in which external access to the rear of the dwellings is obtained through passageways located at intervals on the street frontage”.

Un-closed block; A block which, in the absence of having a built edge on all sides, remains unclosed by the built edge of a parallel back street. It will generally address a street on one of its edges (front) with one line of plots, the tail seam of which is not bounded by opposite rear plots facing an opposite back street. Where a town has a single street as spine, such street may have un-closed blocks on each side (see 2.10.00).

Urban fallow; (Conzenian terminology) Land, within the urban fabric, that is temporarily disused owing to socio-economic devaluation. This concept was developed by Conzen from the Sozialbrache (social fallow) of Hartke (1953). It forms part of the burgage, plot and redevelopment cycles, when land has been cleared but no new development has begun (Conzen, 1960, p. 94) (Larkham and Jones 1991 p79)

Urban grain; A measurement of the pattern of plots in an urban block. When this pattern is dominated by small plots the urban grain is defined as fine. When it is dominated by large plots the urban grain is defined as coarse

Yard; (European English) An area of enclosed outdoor hardstanding or artificially-surfaced ground next to a building, originally of one square-yard in dimension, traditionally used for wet activity such as washing.